

Aydogan Ozcan et al.

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A schematic diagram of a measurement setup. It features a rectangular base plate (1) with a circular disk (3) mounted on its surface. A second rectangular plate (2) is positioned above the disk. A circular coil (4) is placed between the two plates, centered over the disk. A wire (5) connects the coil to a circular meter with a needle. The meter is connected to the base plate (1) and the top plate (2) to complete the circuit.

Figure 1 is a schematic diagram of a magnetic field measurement setup. On the left, a graph shows "SECOND-ORDER SUSCEPTIBILITY" on the vertical axis and "Z" on the horizontal axis. A curve, labeled 15, shows a peak and a dip. On the right, a 3D block, labeled 10, represents the sample with a hatched top surface.

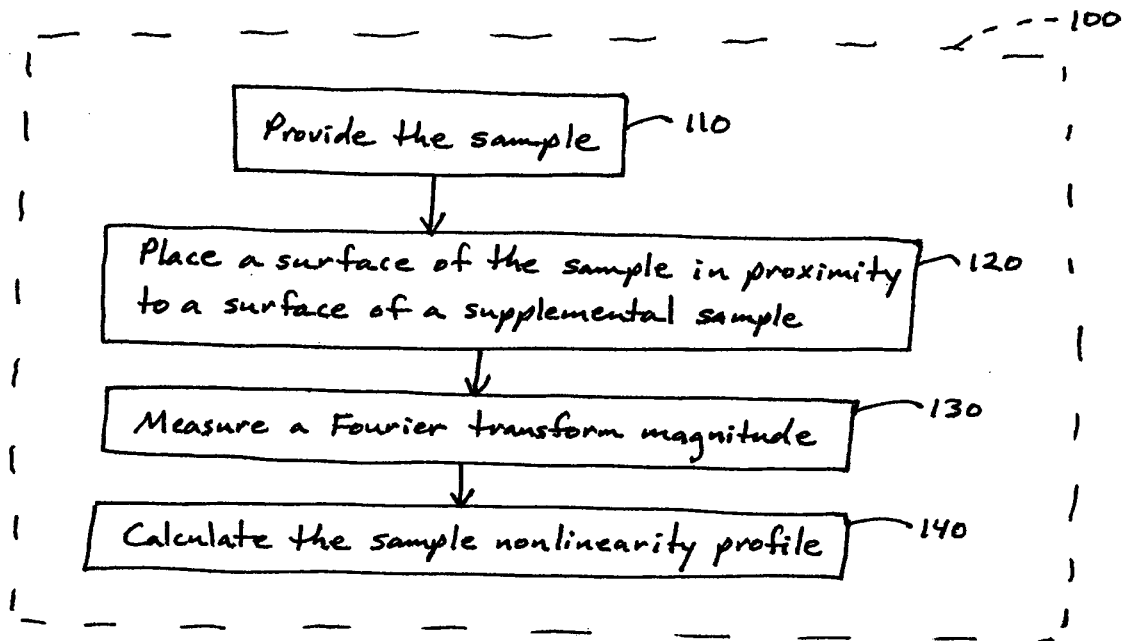
METHOD OF MEASURING A PHYSICAL FUNCTION USING A
COMPOSITE FUNCTION WHICH INCLUDES THE PHYSICAL
FUNCTION AND AN ARBITRARY REFERENCE FUNCTION

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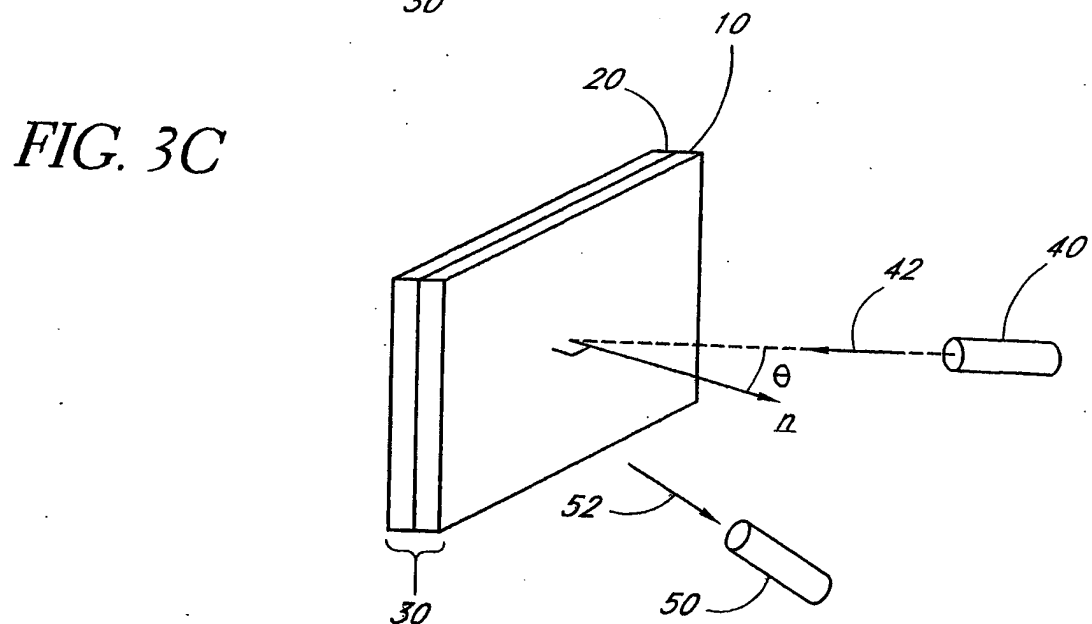
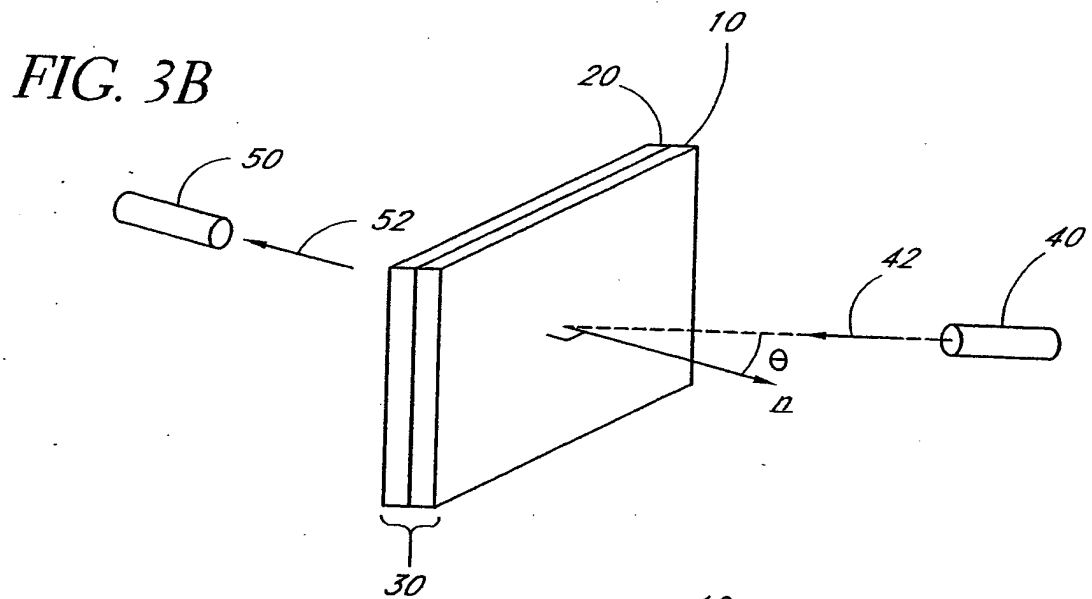
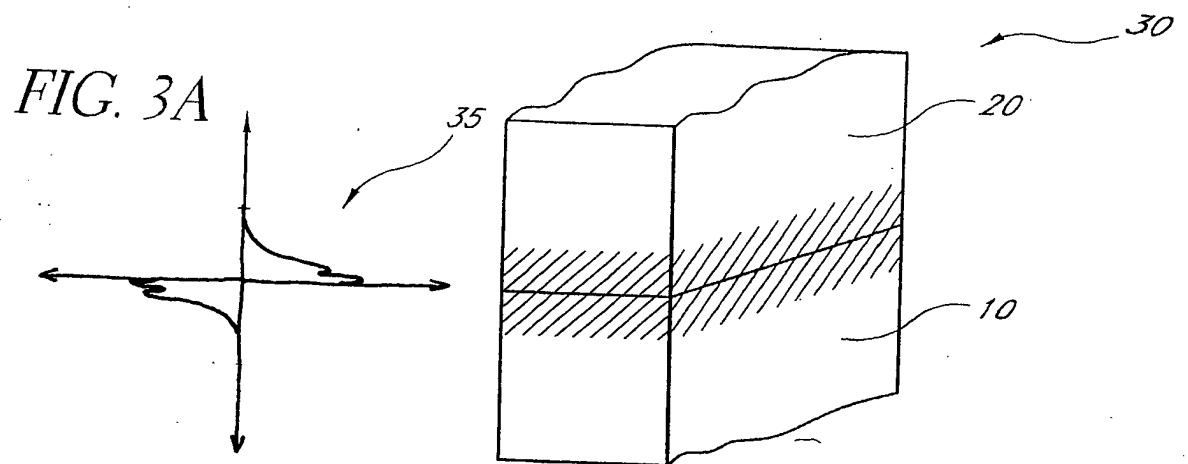
Figure 2:



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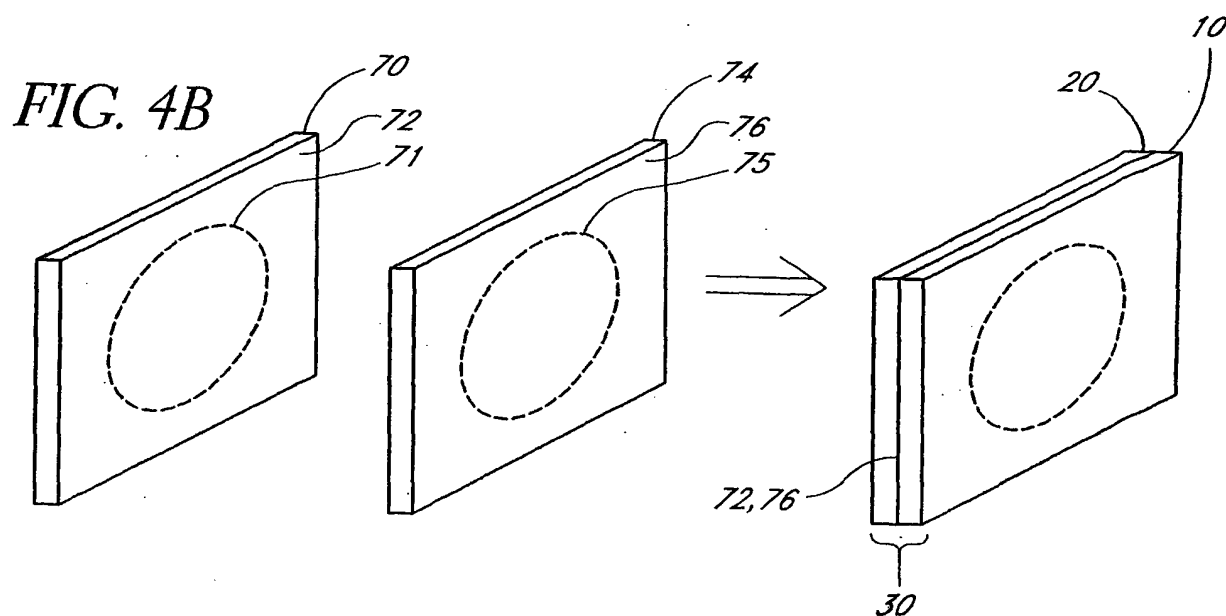
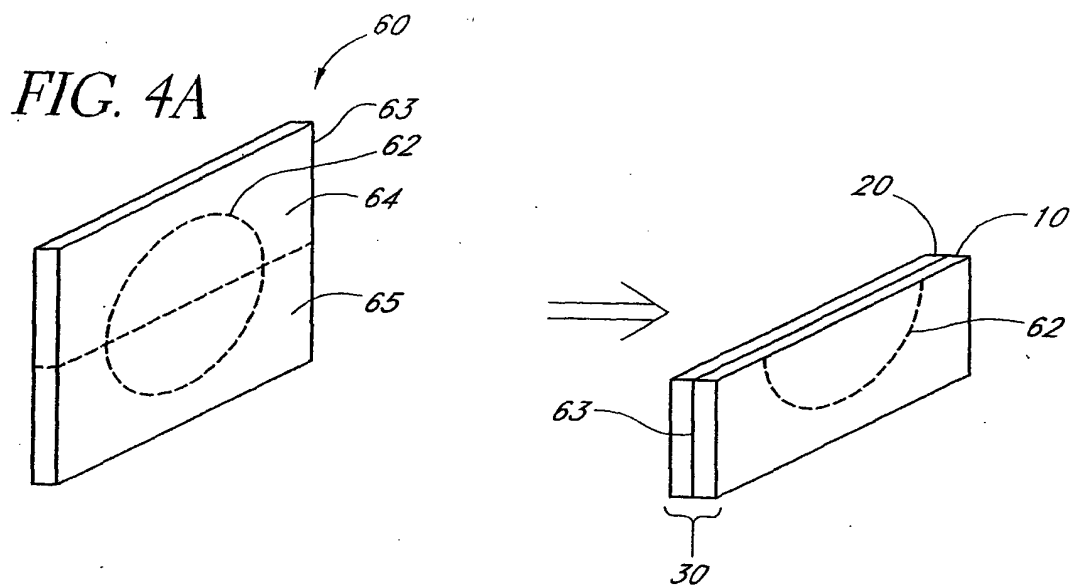


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FIG. 4C

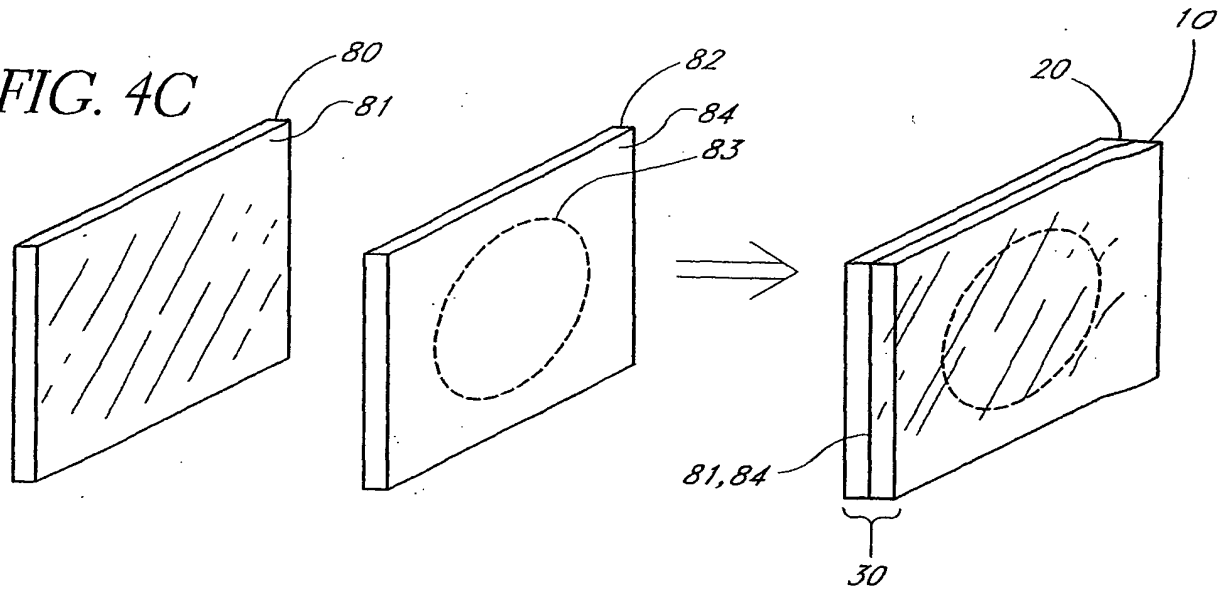
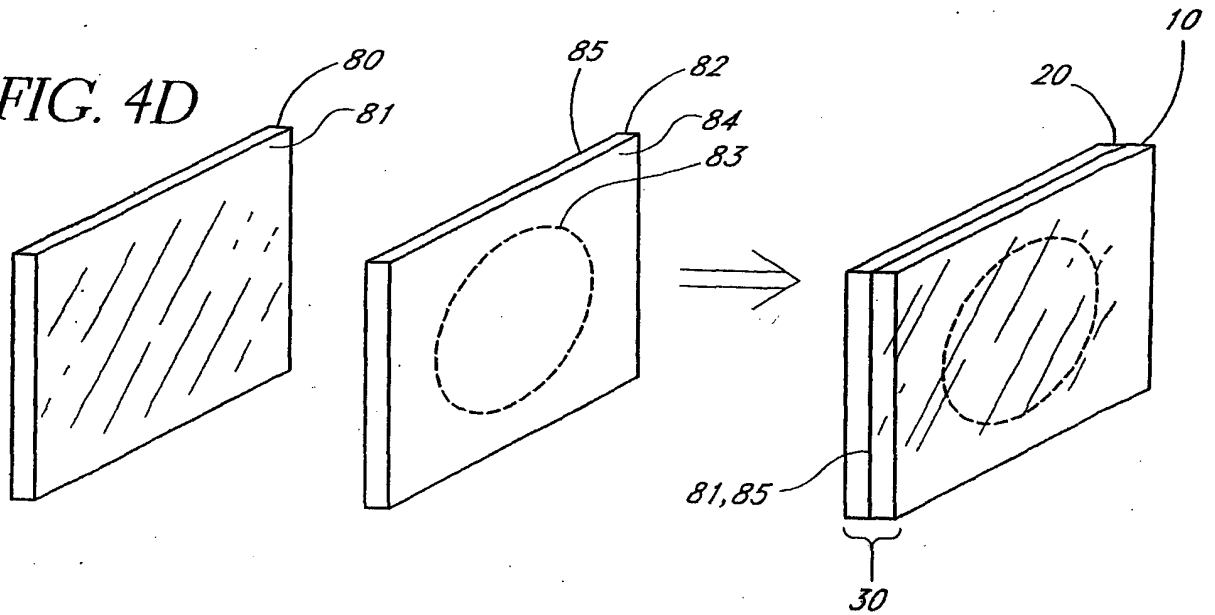


FIG. 4D

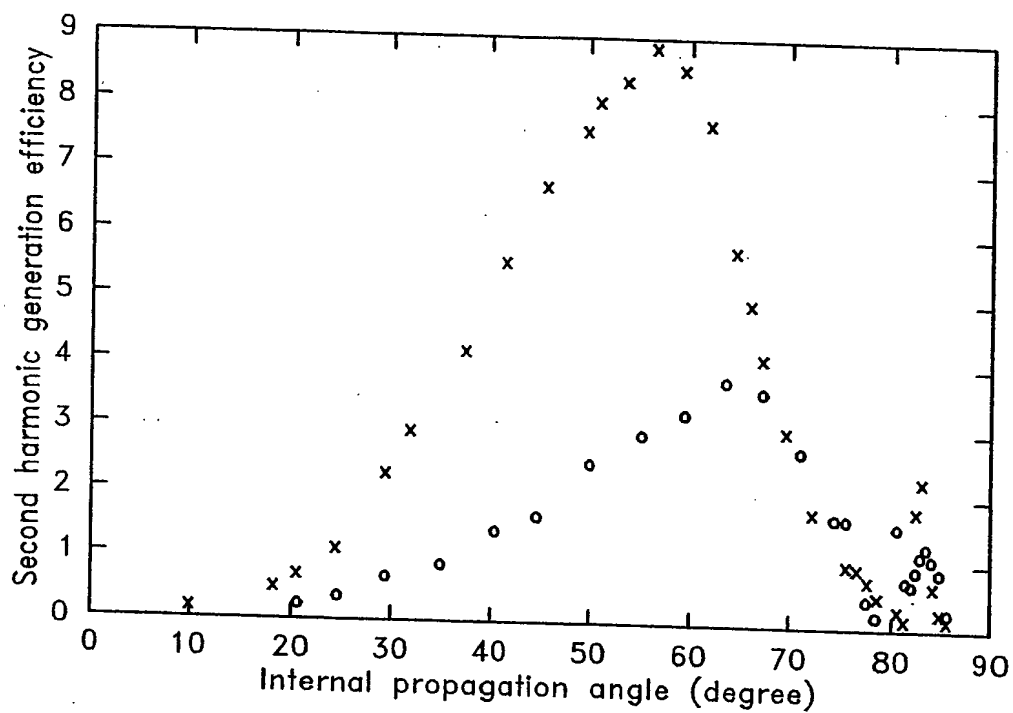


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FIG. 5



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Figure 6:

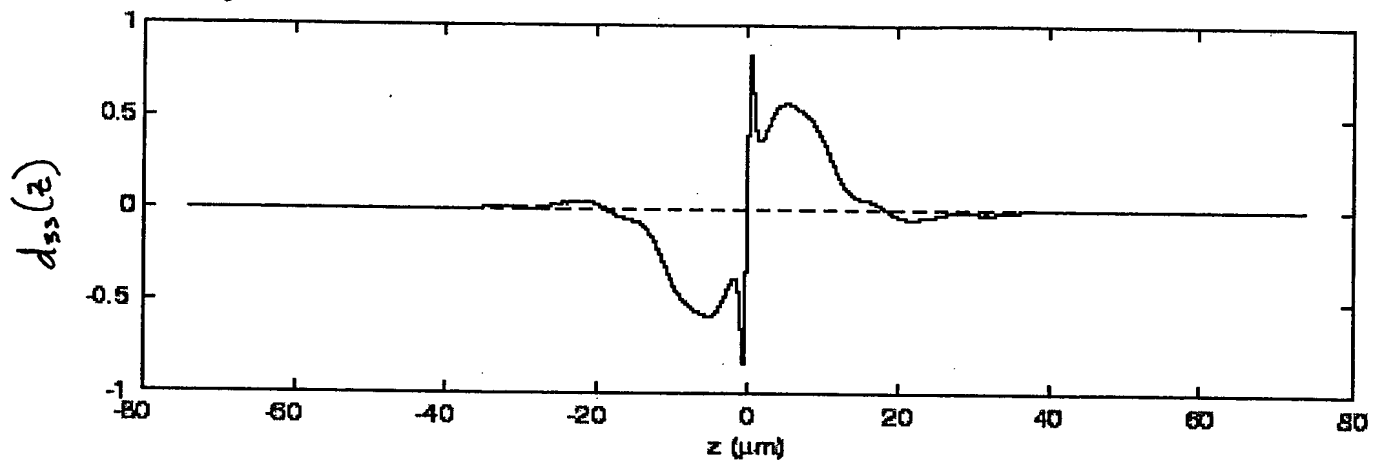
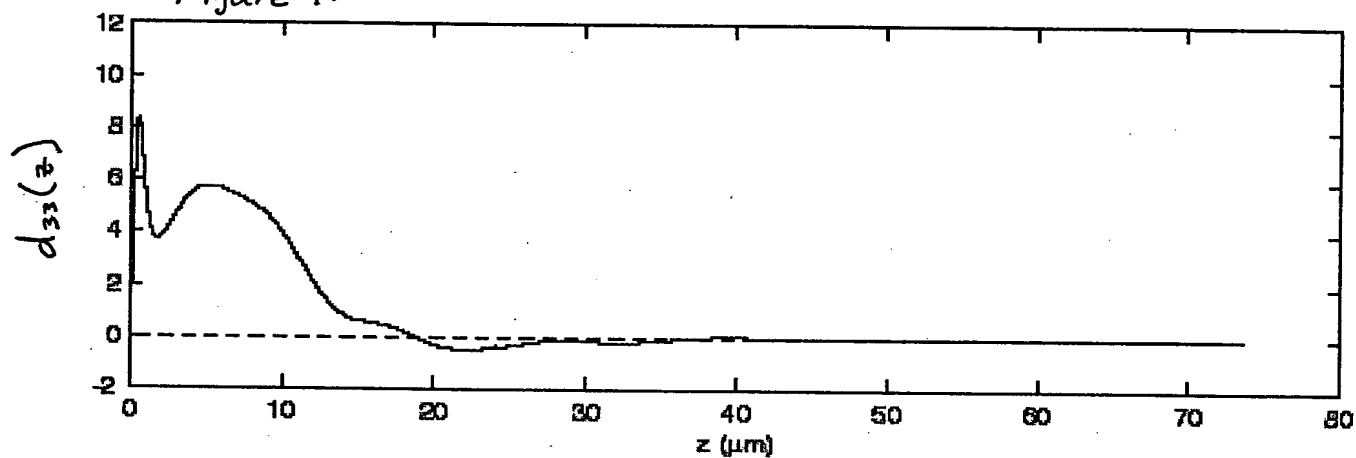


Figure 7:

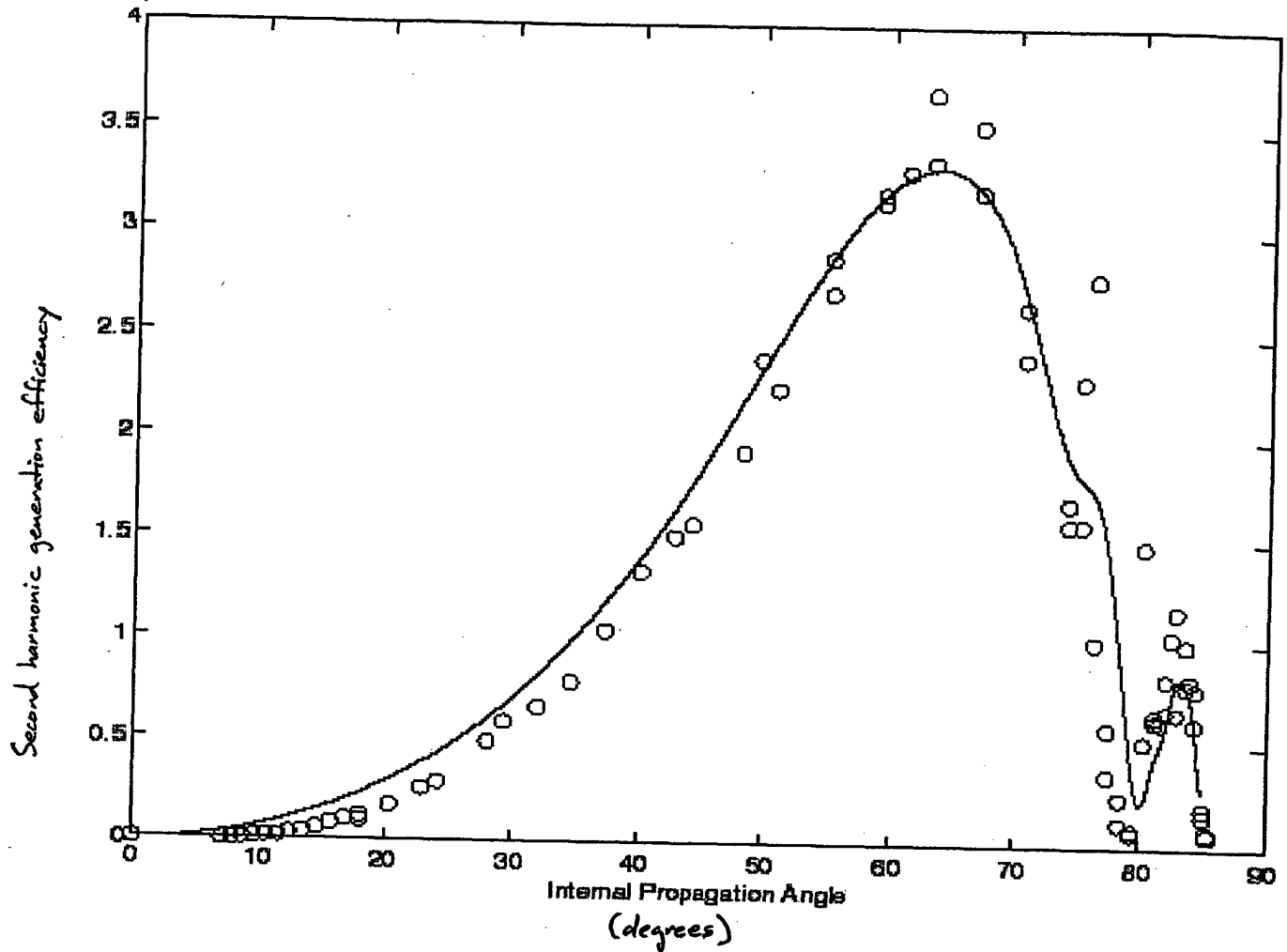


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Figure 8:

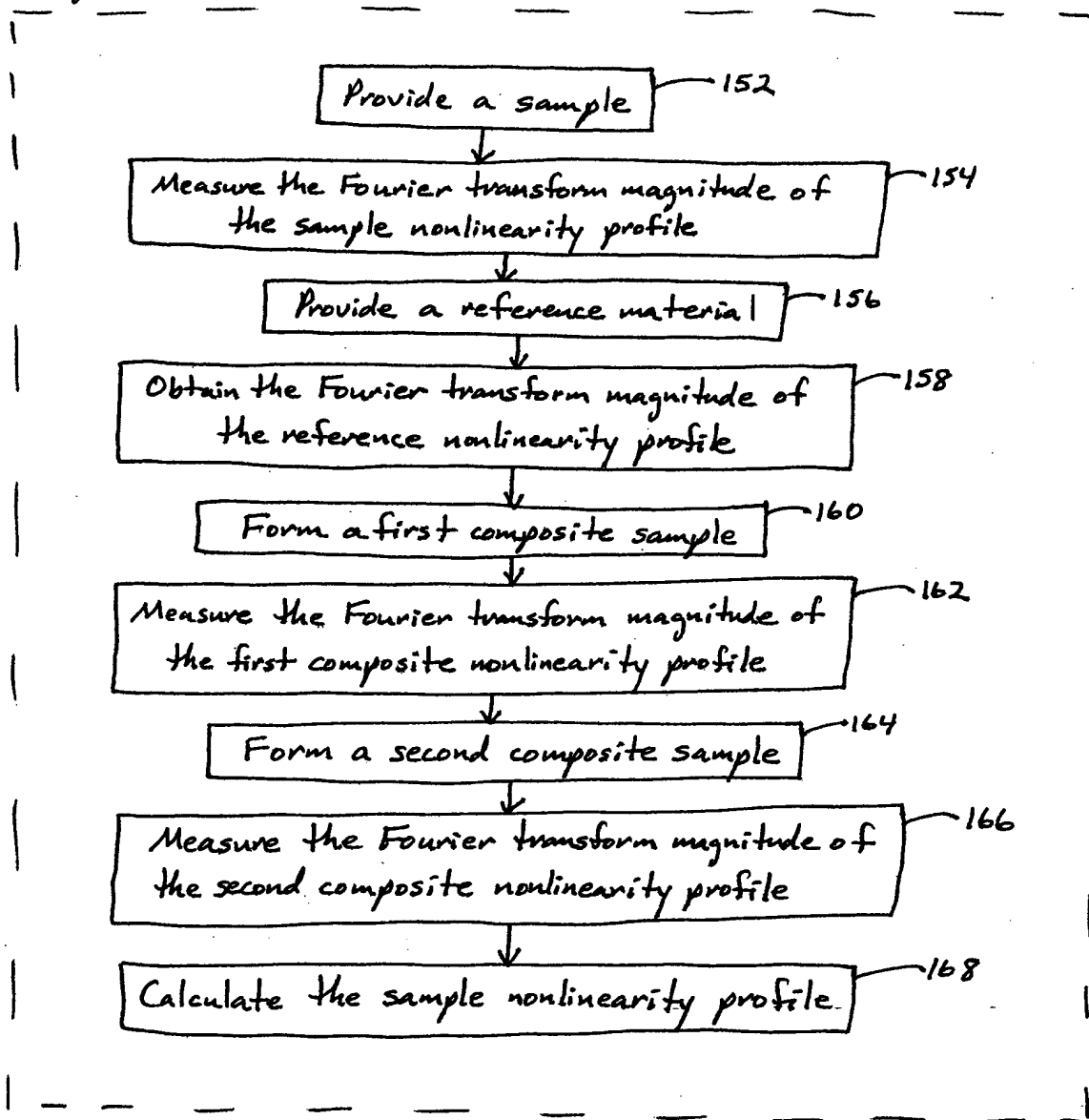


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Figure 9:



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Figure 10A:

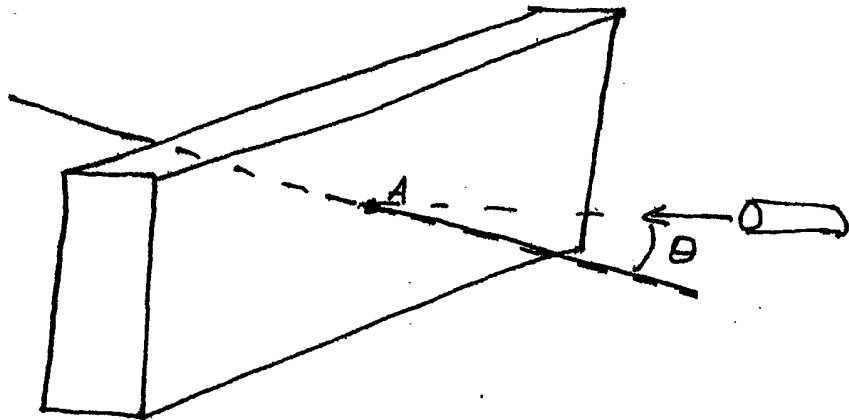
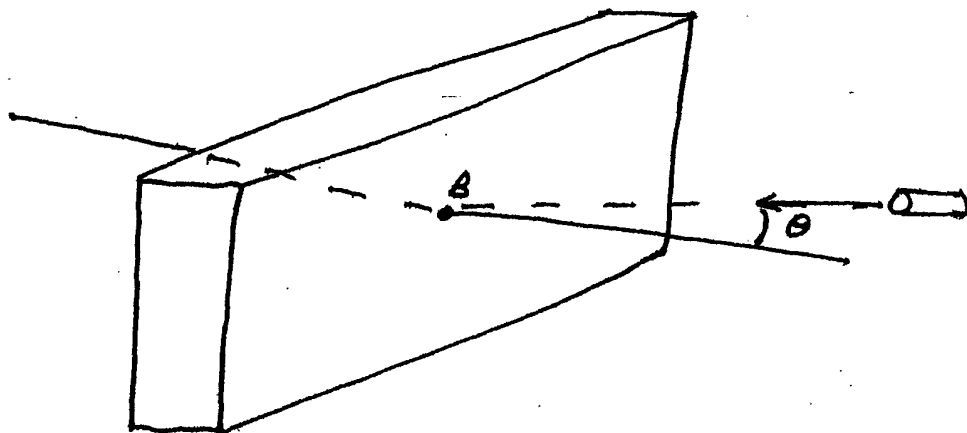


Figure 10B:



METHOD OF MEASURING A PHYSICAL FUNCTION USING A
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Figure 11A:

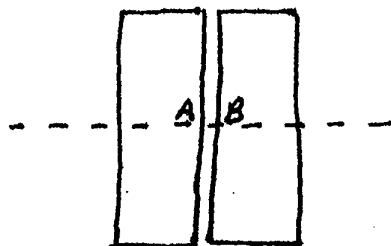


Figure 11B:

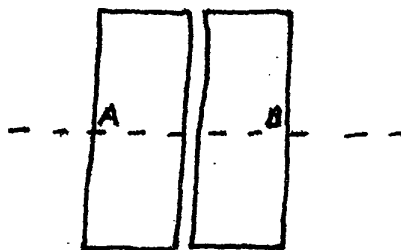


Figure 11C:

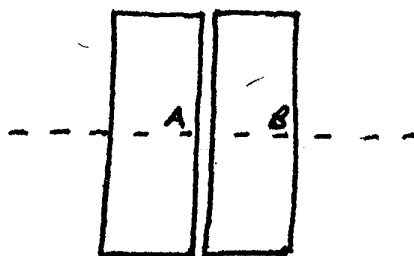
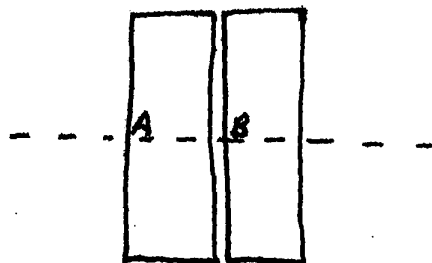


Figure 11D:



METHOD OF MEASURING A PHYSICAL FUNCTION USING A
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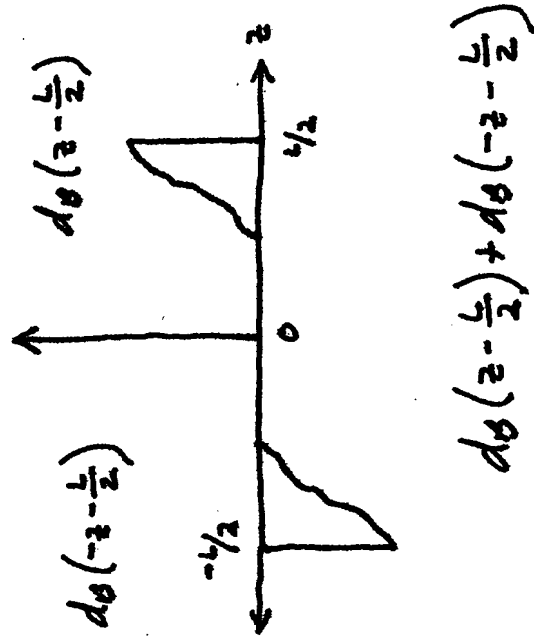


Figure 12B

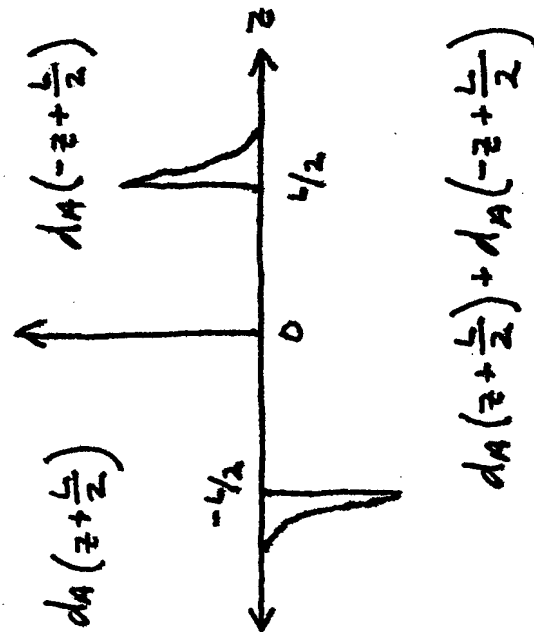
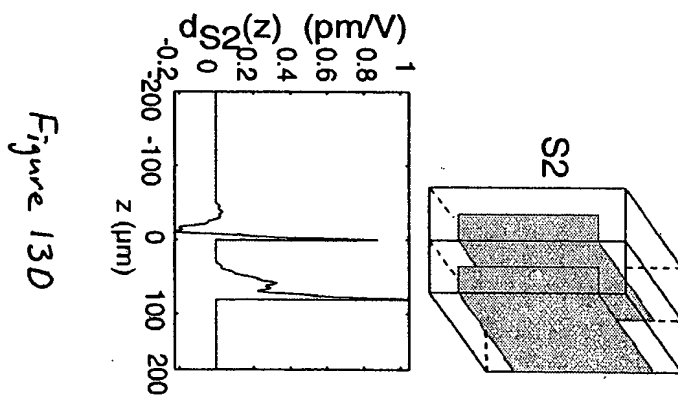
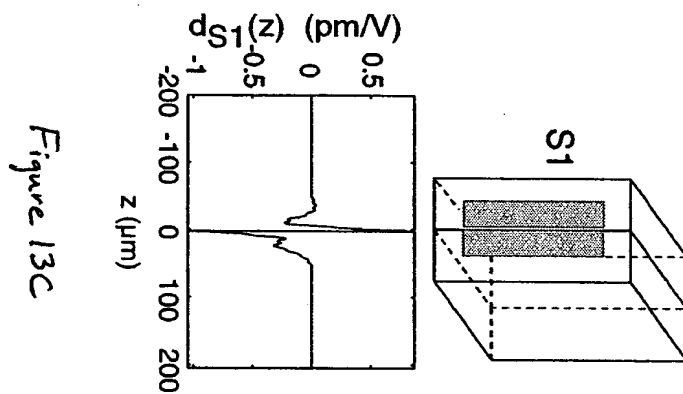
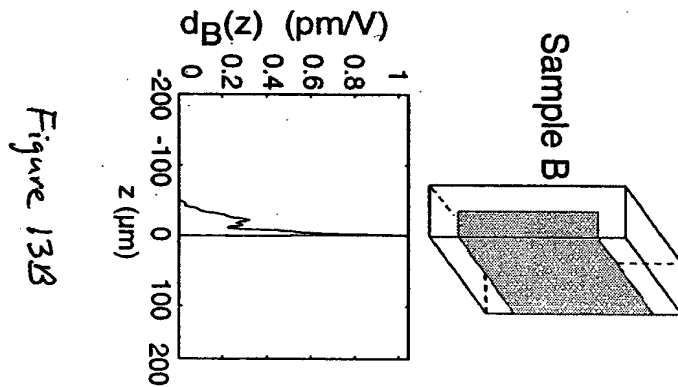
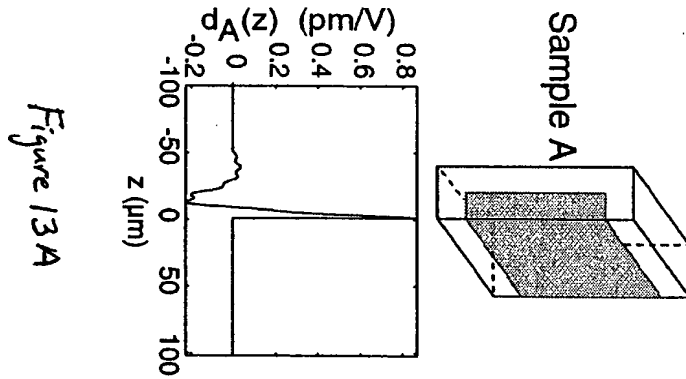


Figure 12A

METHOD OF MEASURING A PHYSICAL FUNCTION USING A
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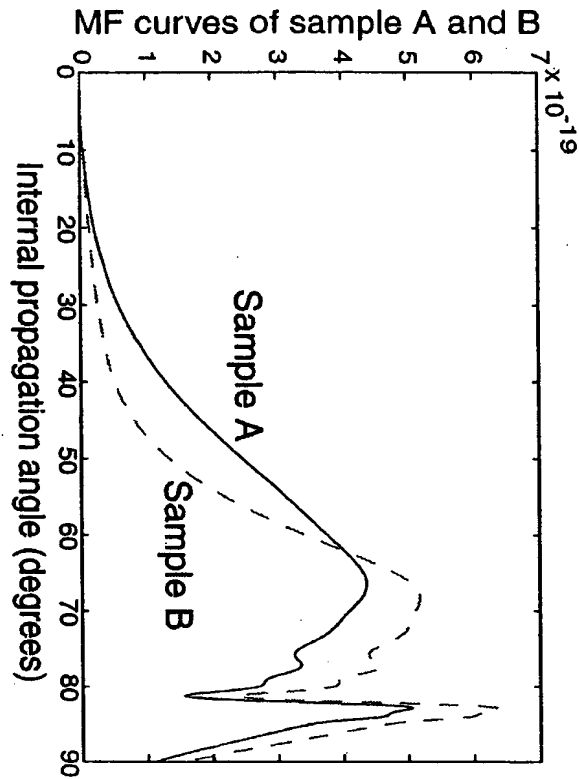


Figure 14A

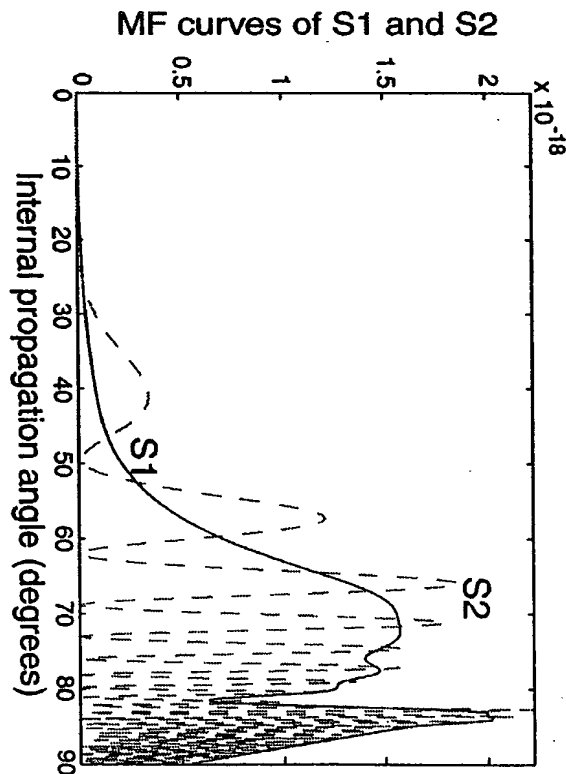


Figure 14B

METHOD OF MEASURING A PHYSICAL FUNCTION USING A
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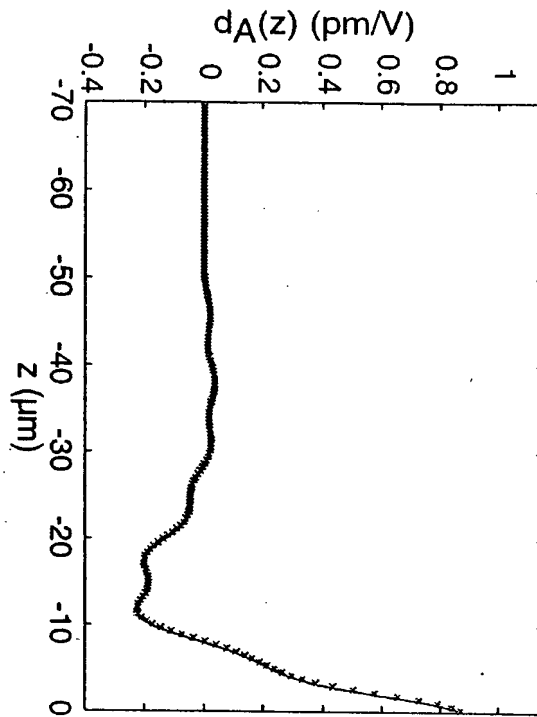


Figure 15A

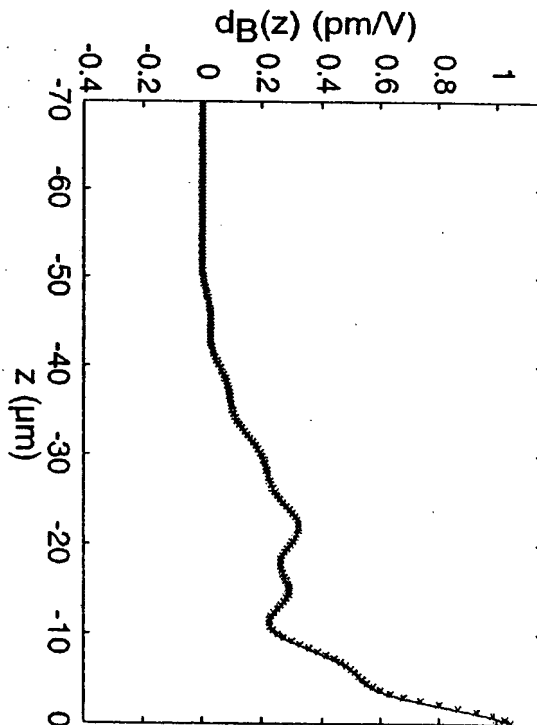


Figure 15B

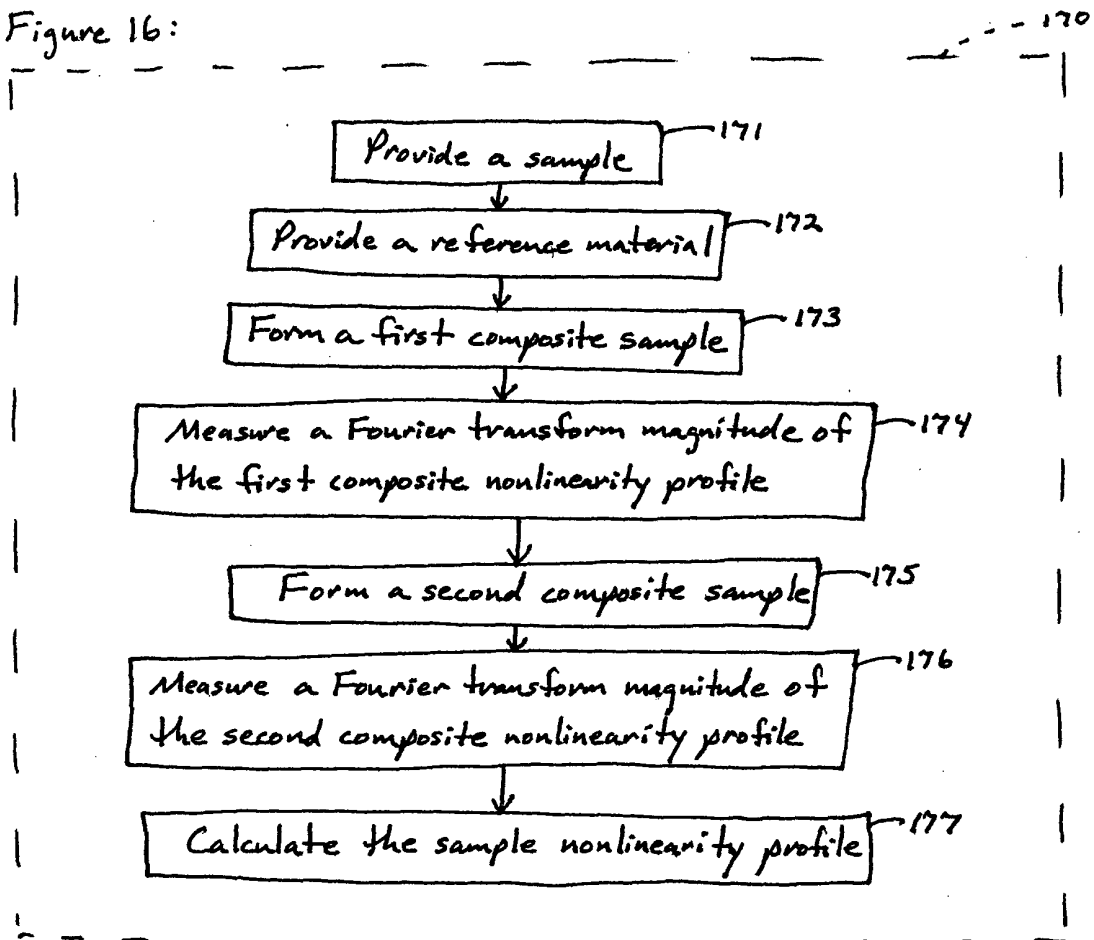
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Figure 16:



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Figure 17:

Calculate an inverse Fourier transform of the difference between the Fourier transform magnitudes of the first and second composite nonlinearity profiles

178

Separate the inverse Fourier transform into a first convolution function and a second convolution function

179

Calculate the Fourier transforms of the first convolution function and the second convolution function

180

Calculate the phase and amplitude of the Fourier transform of the sample nonlinearity profile

181

Calculate the inverse Fourier transform of the Fourier transform of the sample nonlinearity profile

182

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Figure 18A:

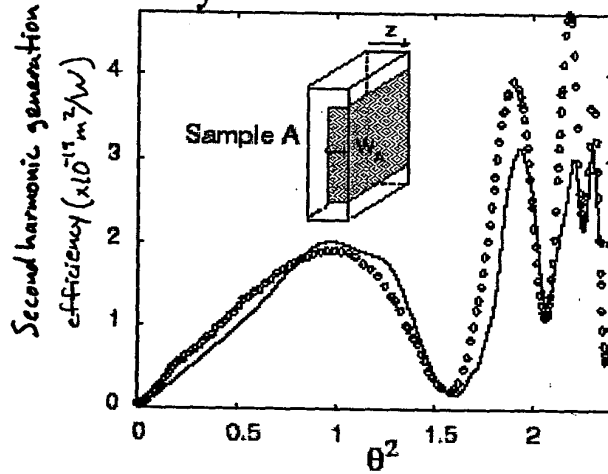


Figure 18B:

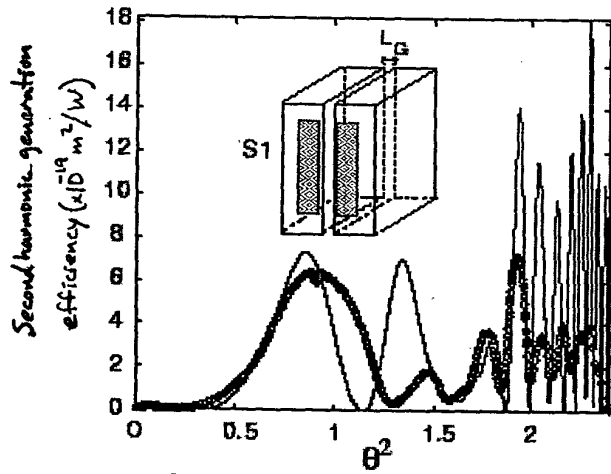
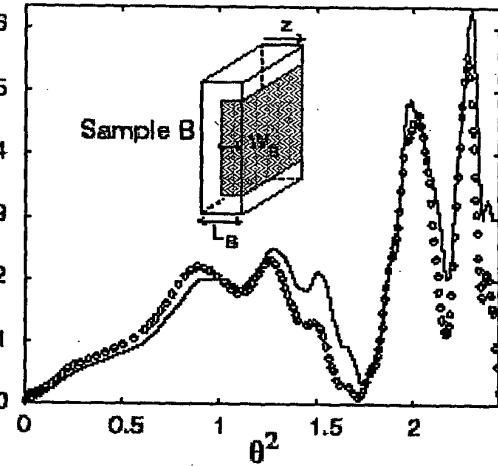


Figure 18C

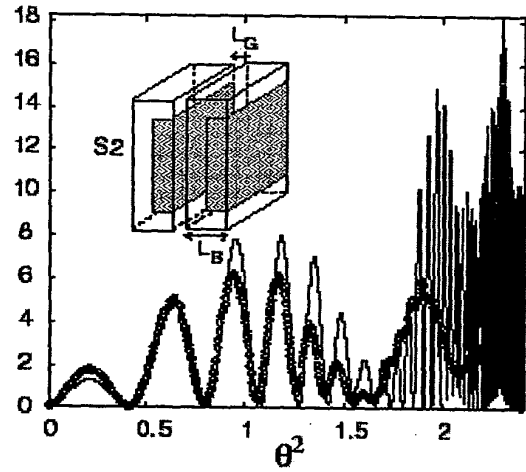


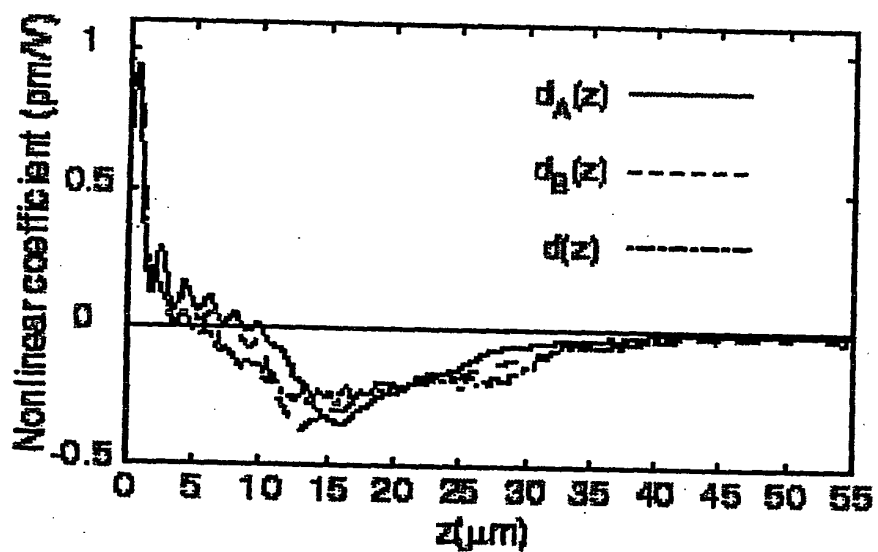
Figure 18D

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Figure 19:



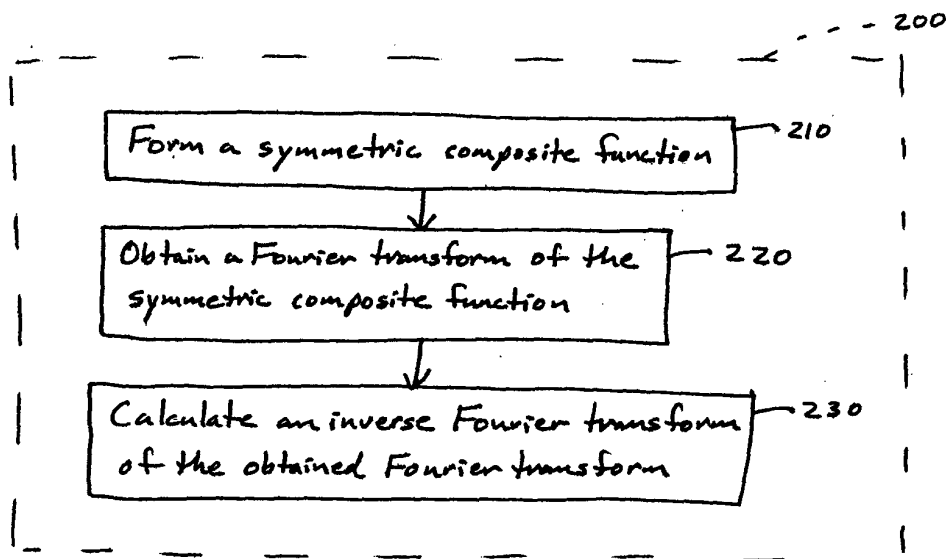
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Figure 20:



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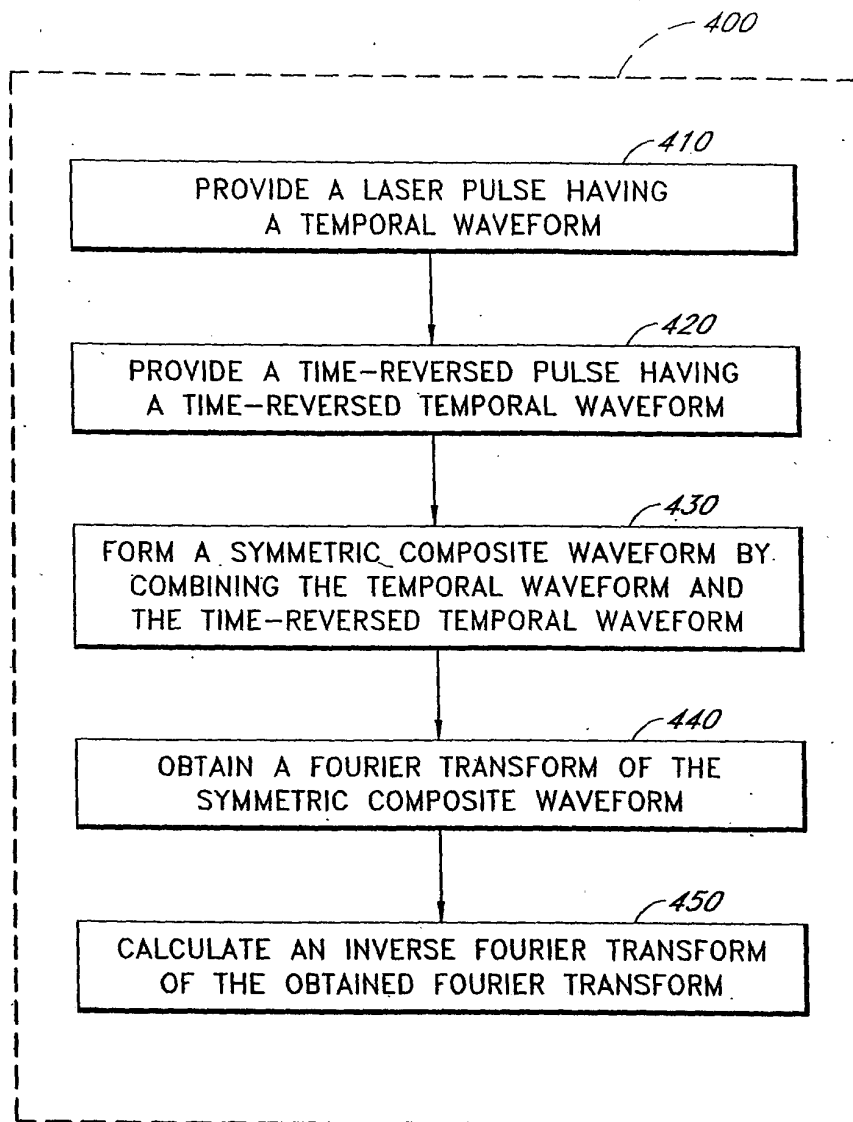


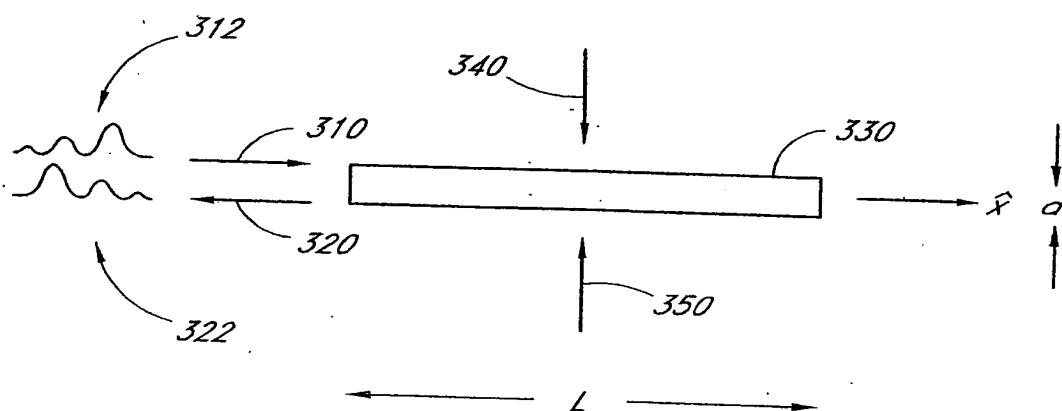
Figure 21

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Figure 22:



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Figure 23A:

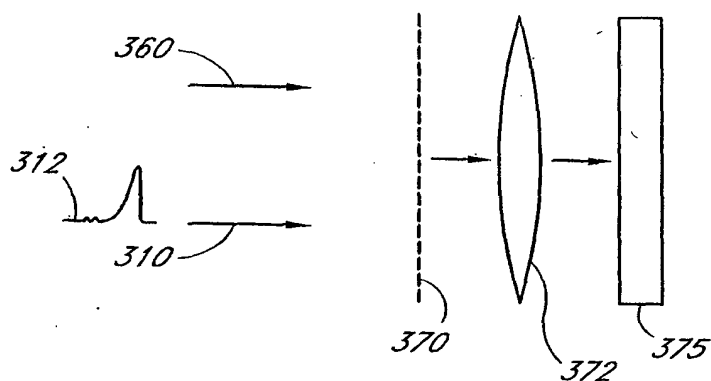
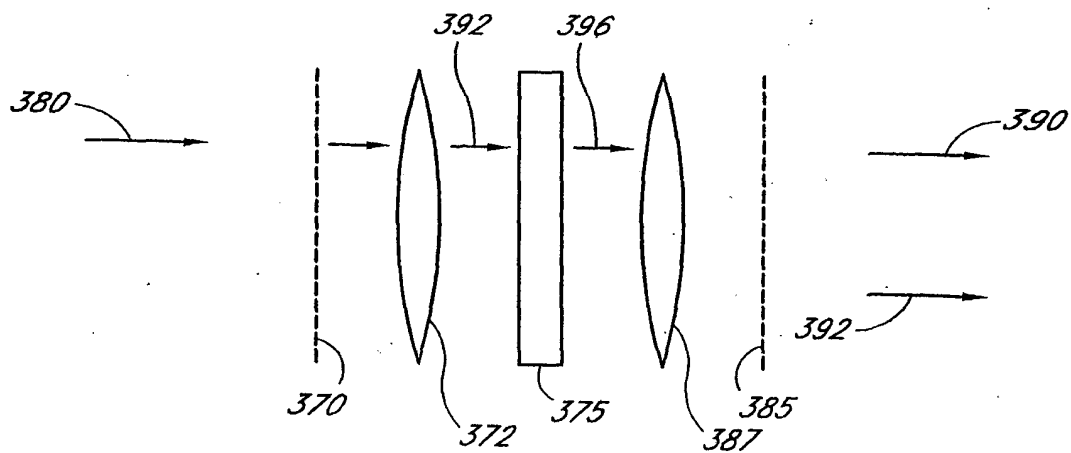


Figure 23B:

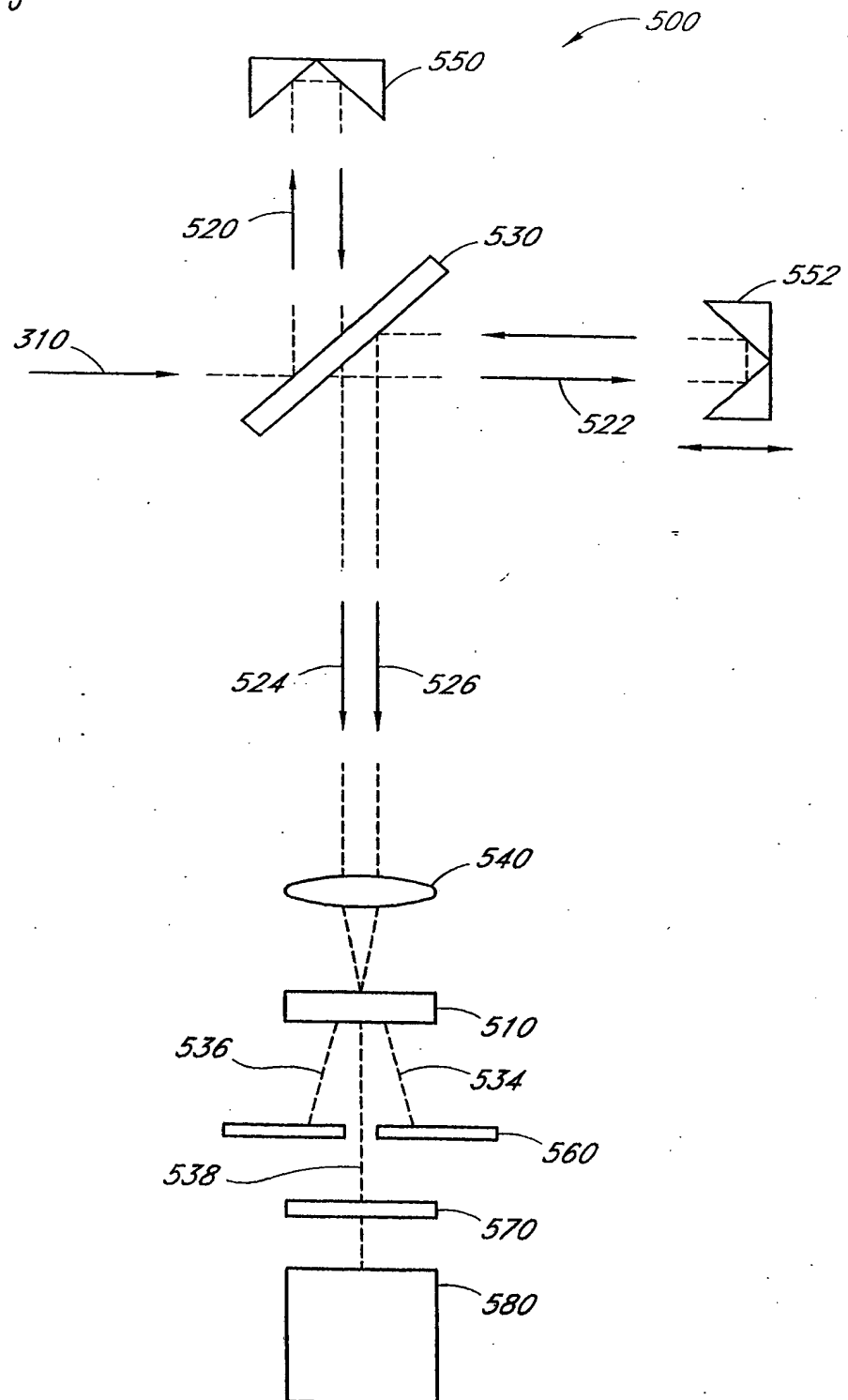


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Figure 24:

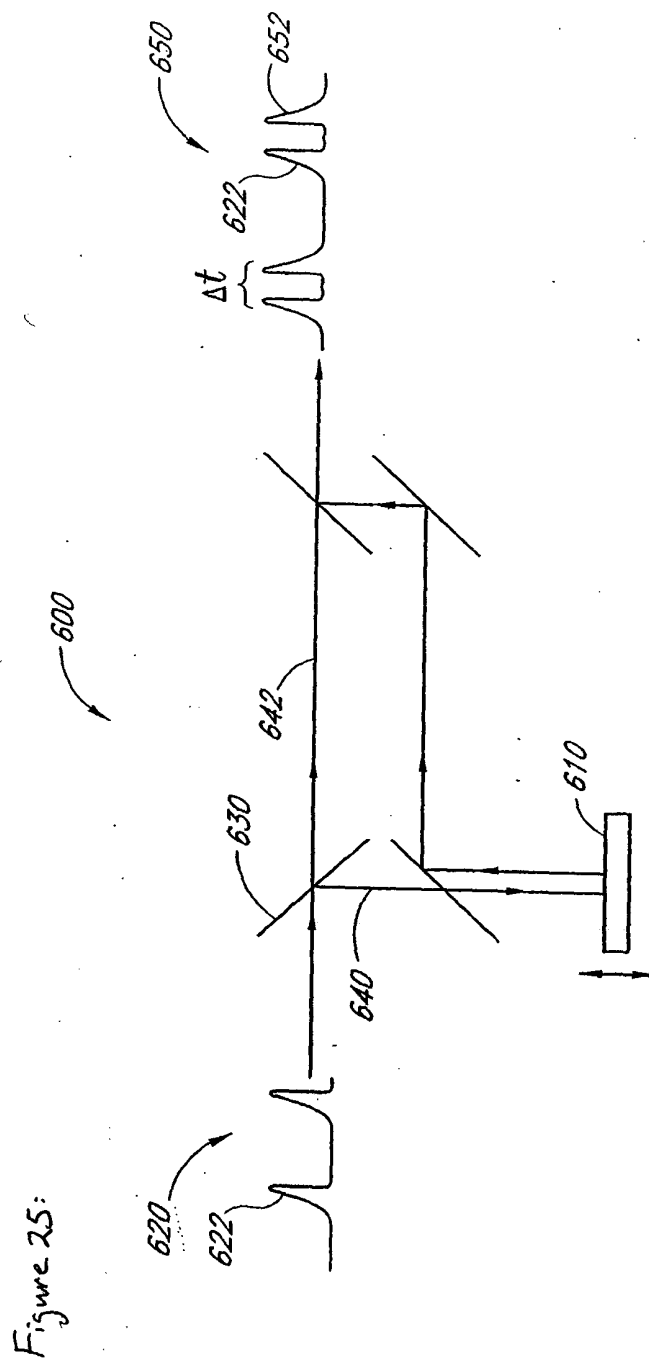


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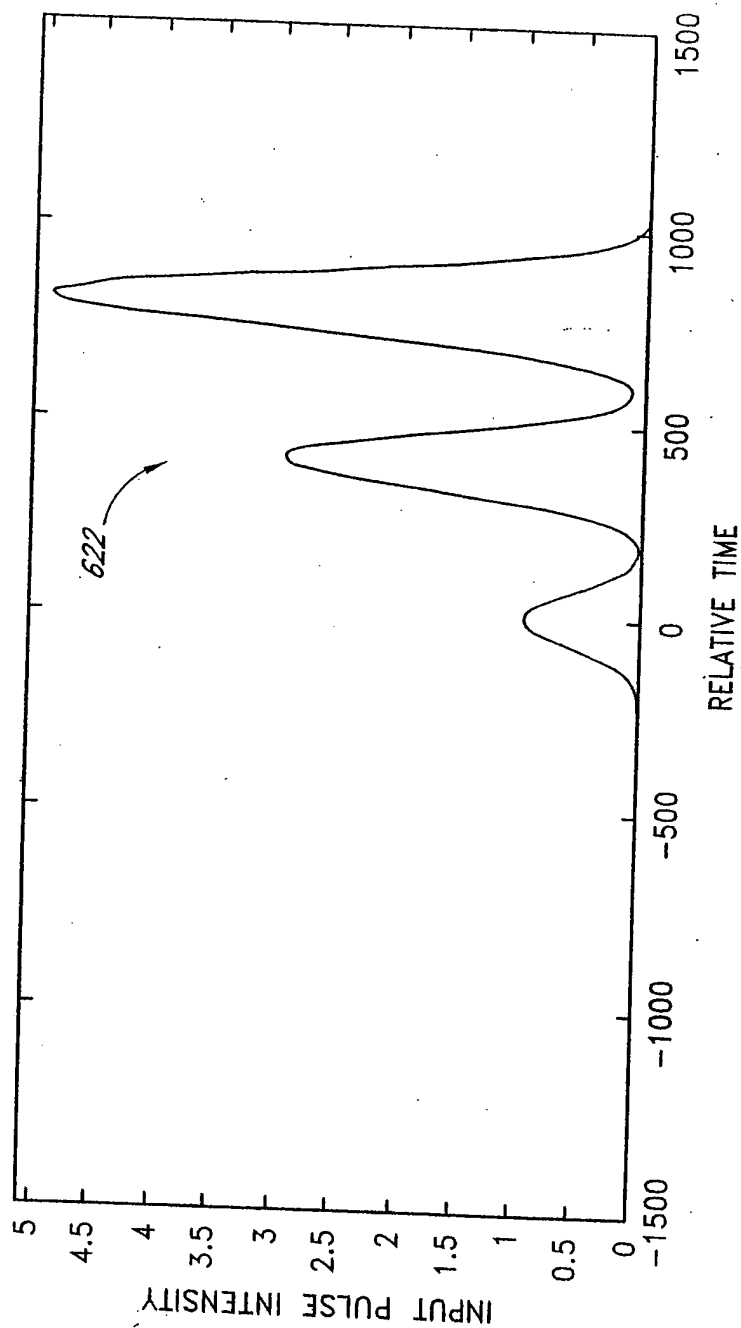


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Figure 26:



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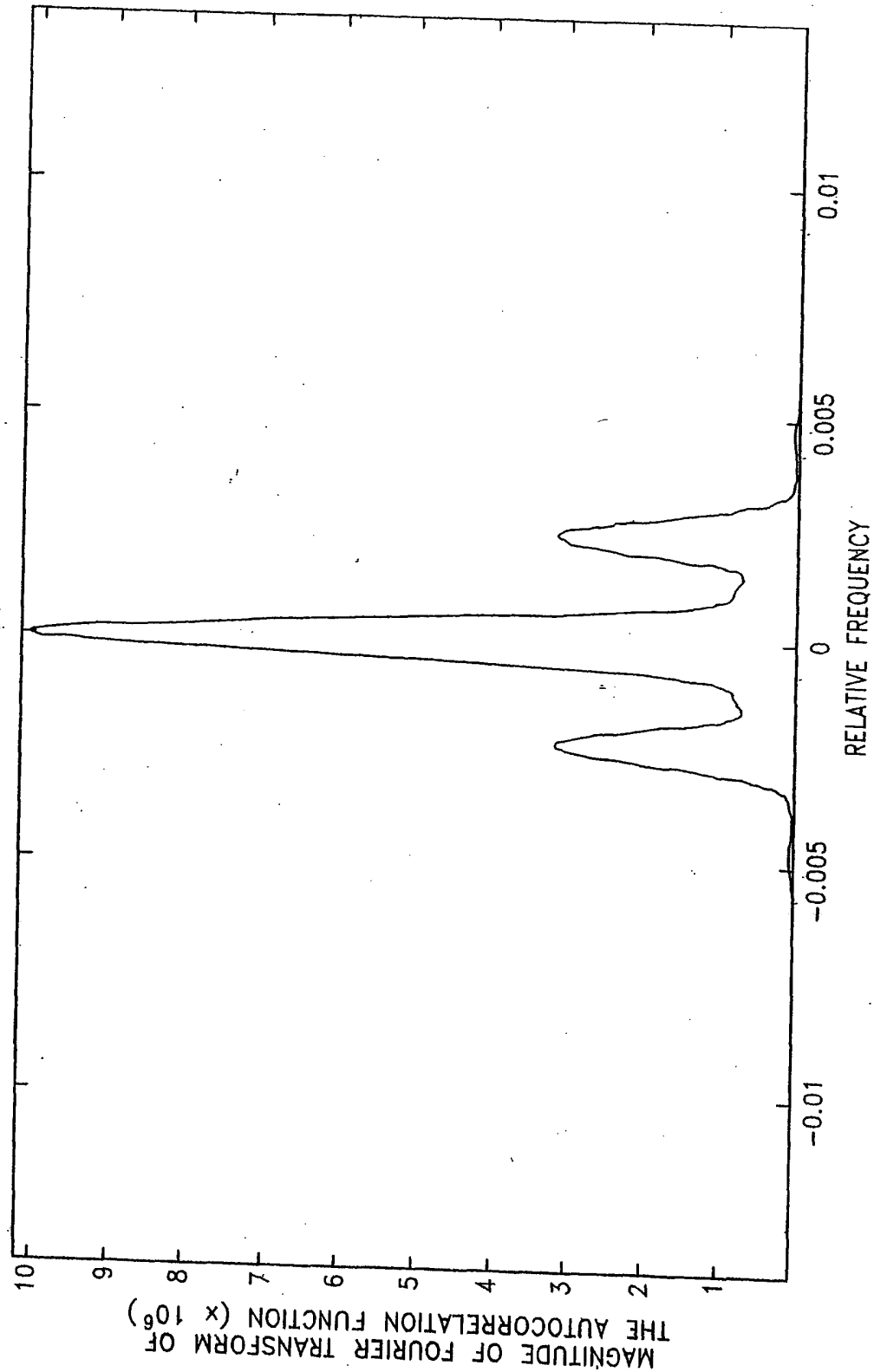


Figure 27

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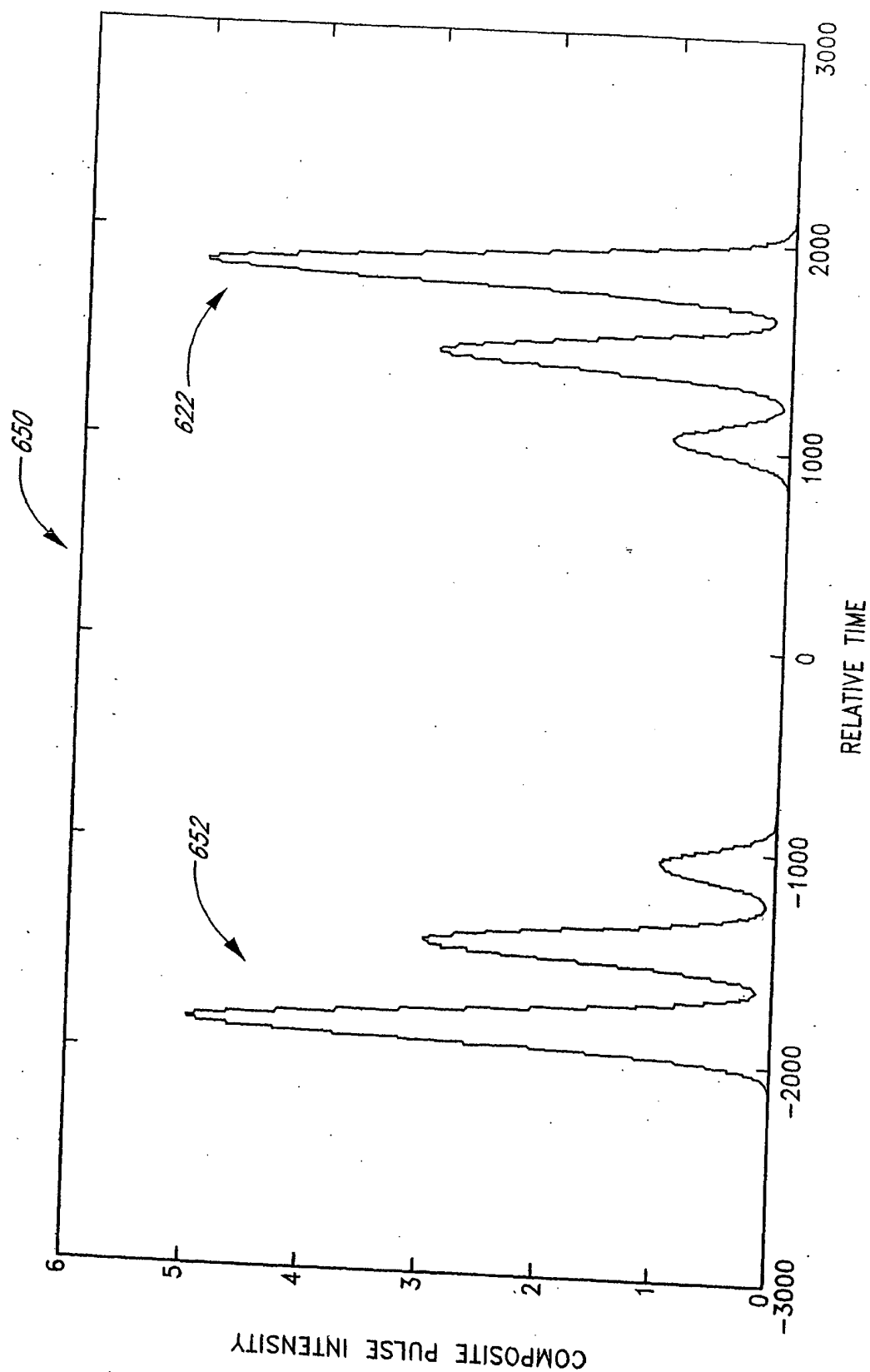


Figure 28

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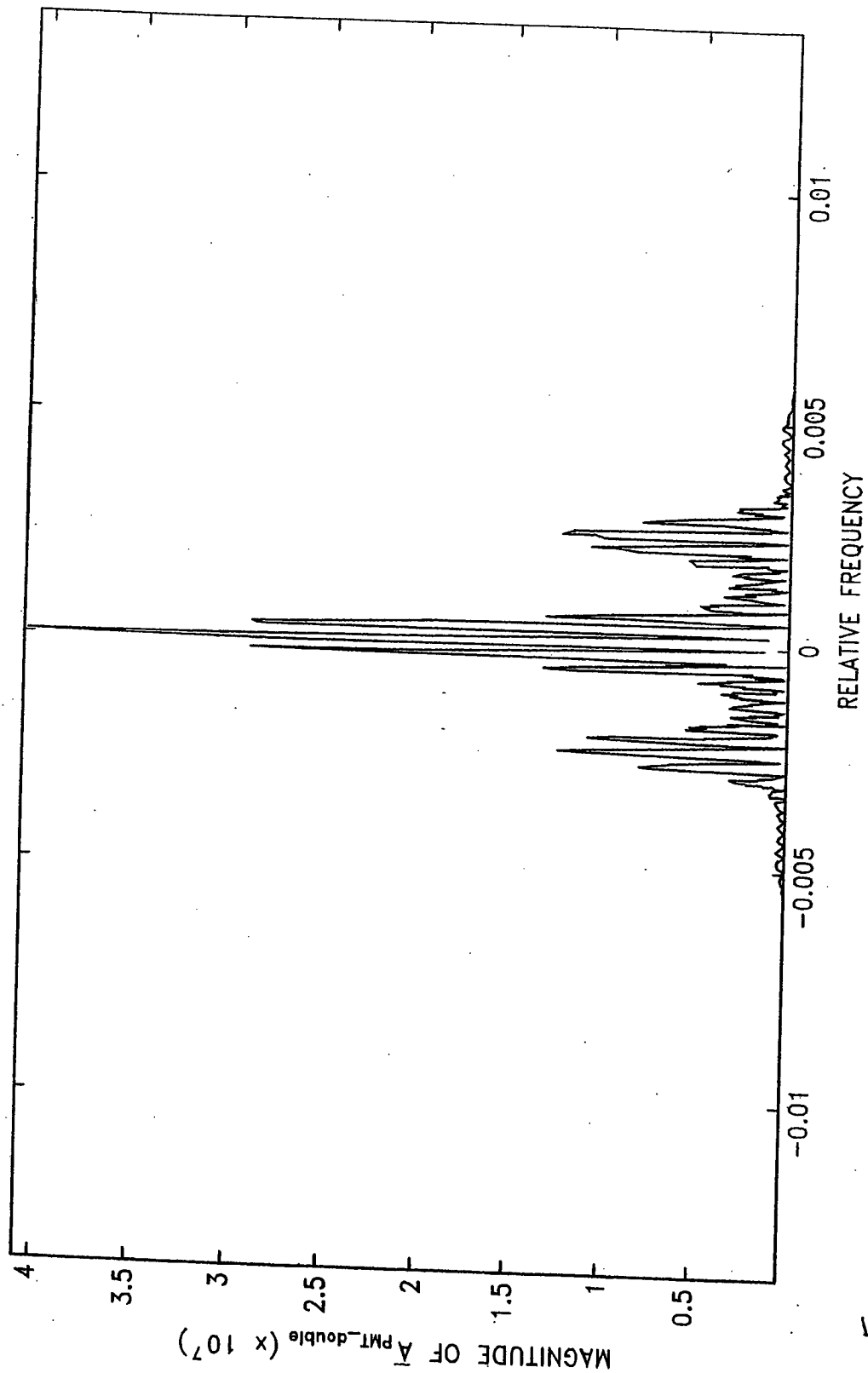


Figure 29

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Figure 30A:

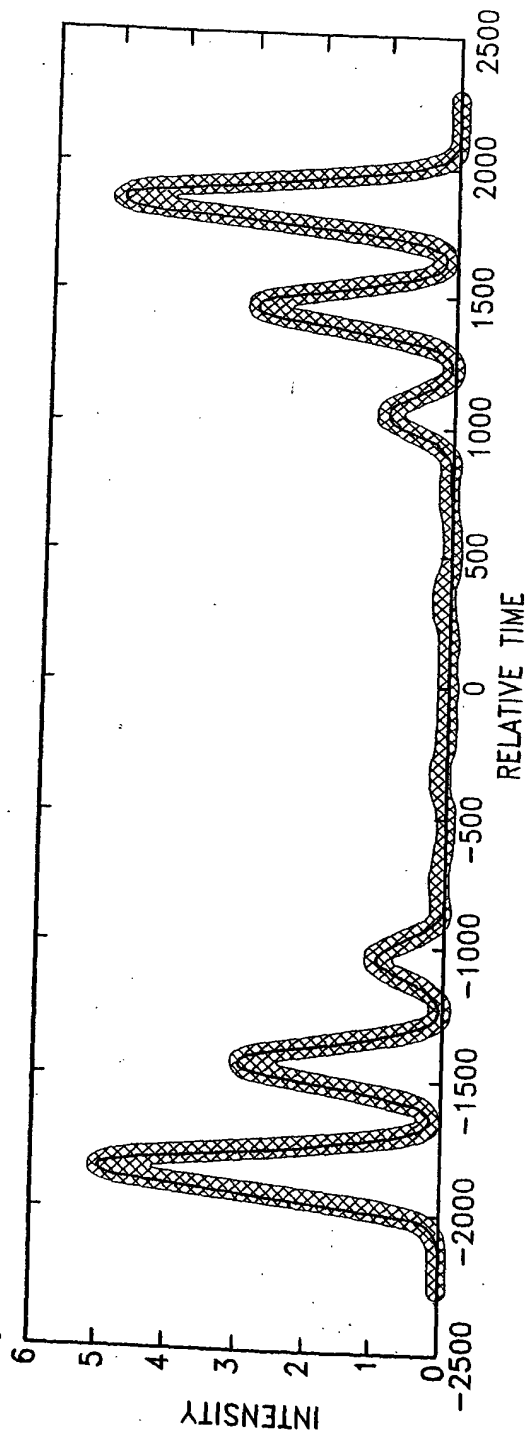
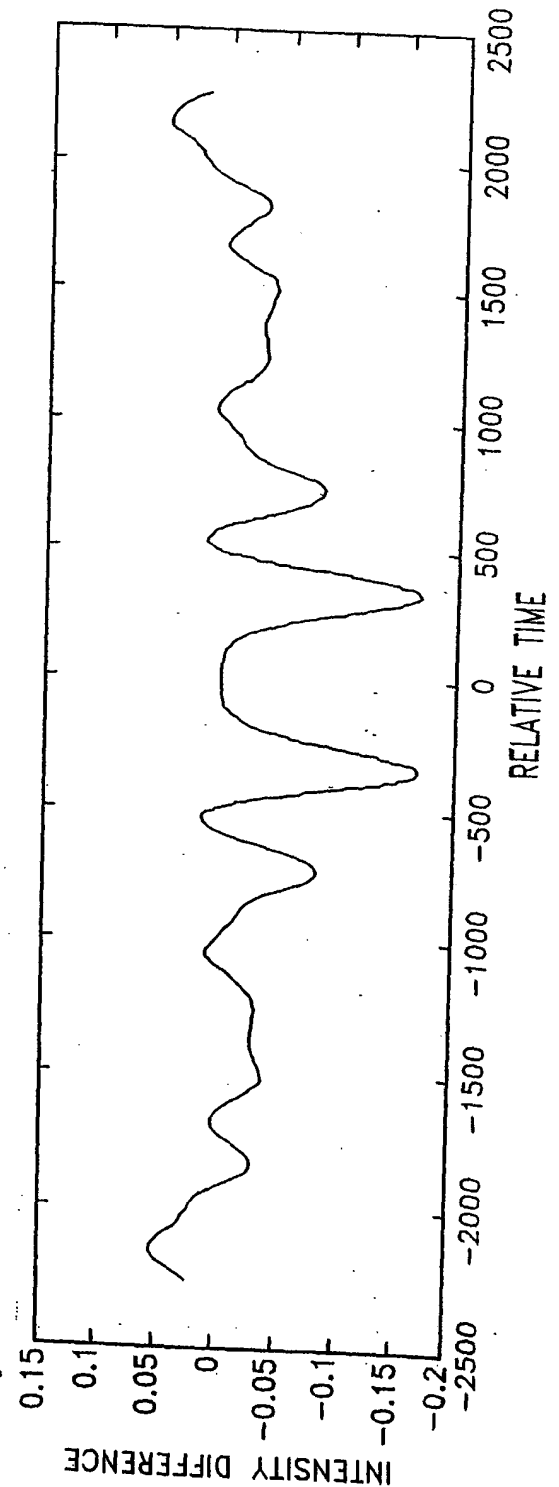


Figure 30B:



METHOD OF MEASURING A PHYSICAL FUNCTION USING A
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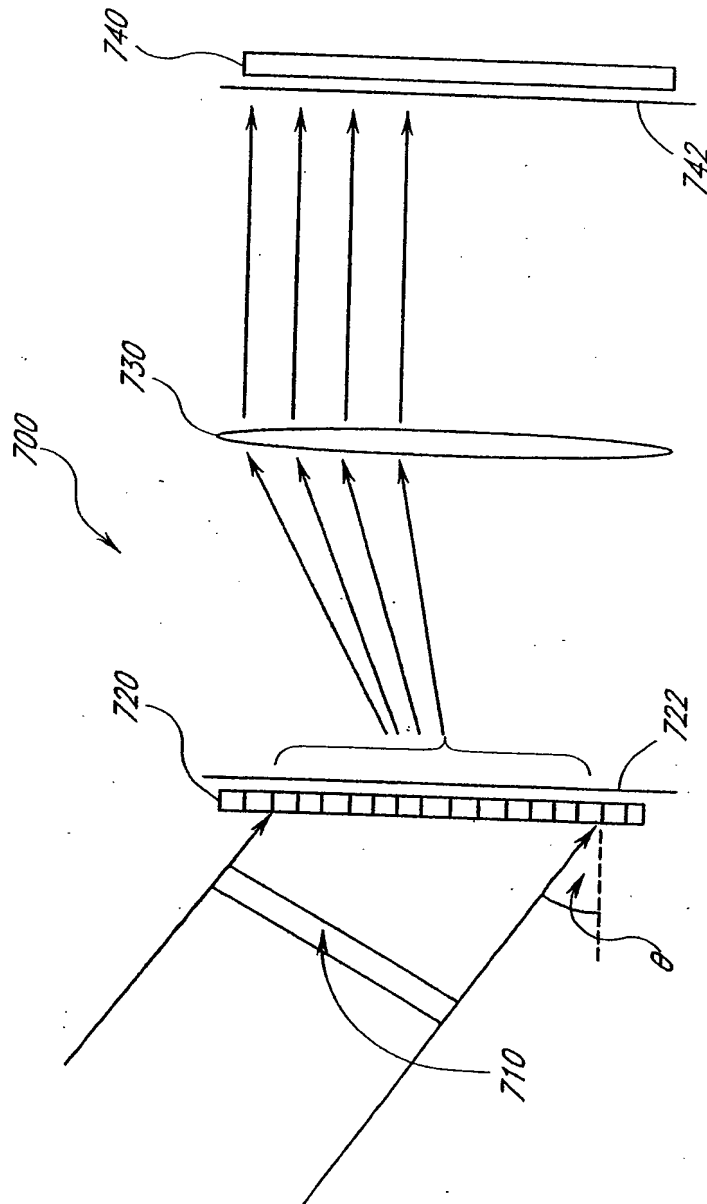


Figure 31

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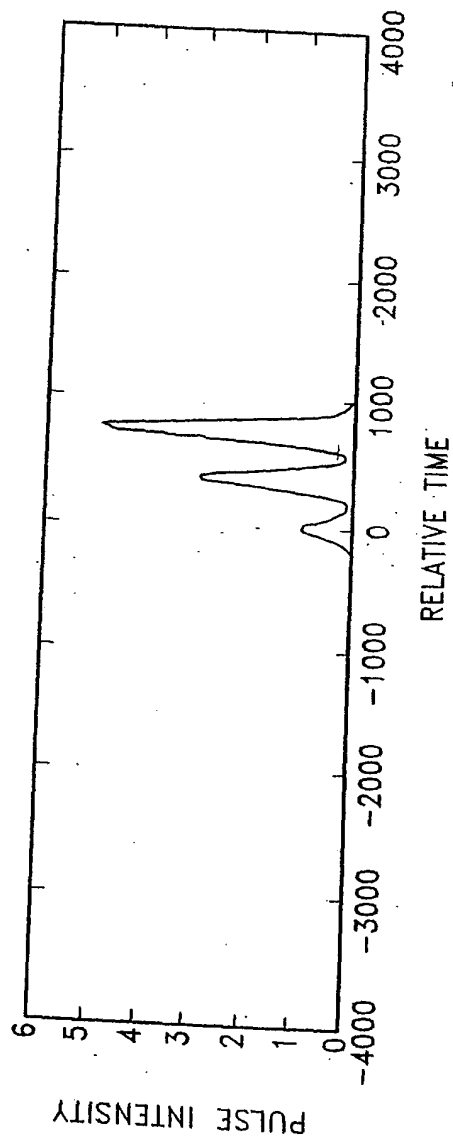


Figure 32A

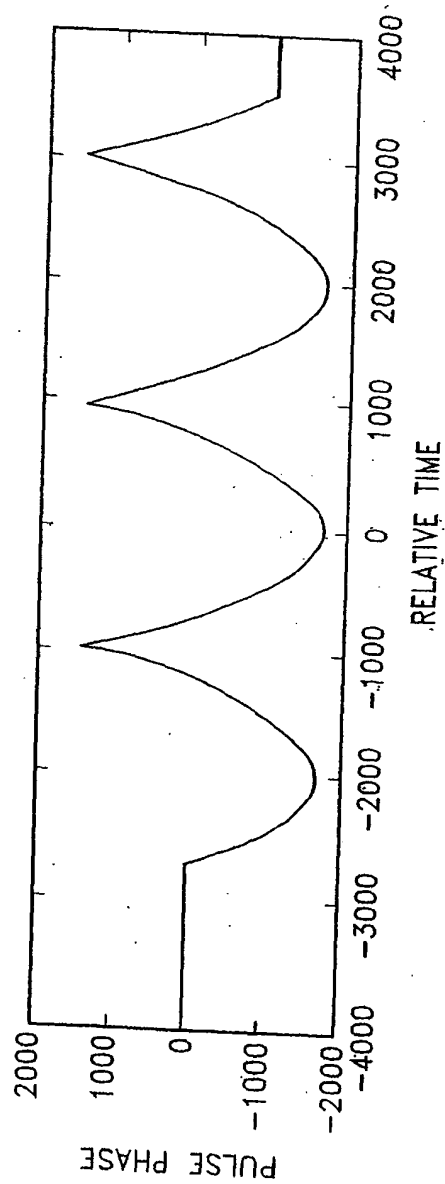


Figure 32B

METHOD OF MEASURING A PHYSICAL FUNCTION USING A
COMPOSITE FUNCTION WHICH INCLUDES THE PHYSICAL
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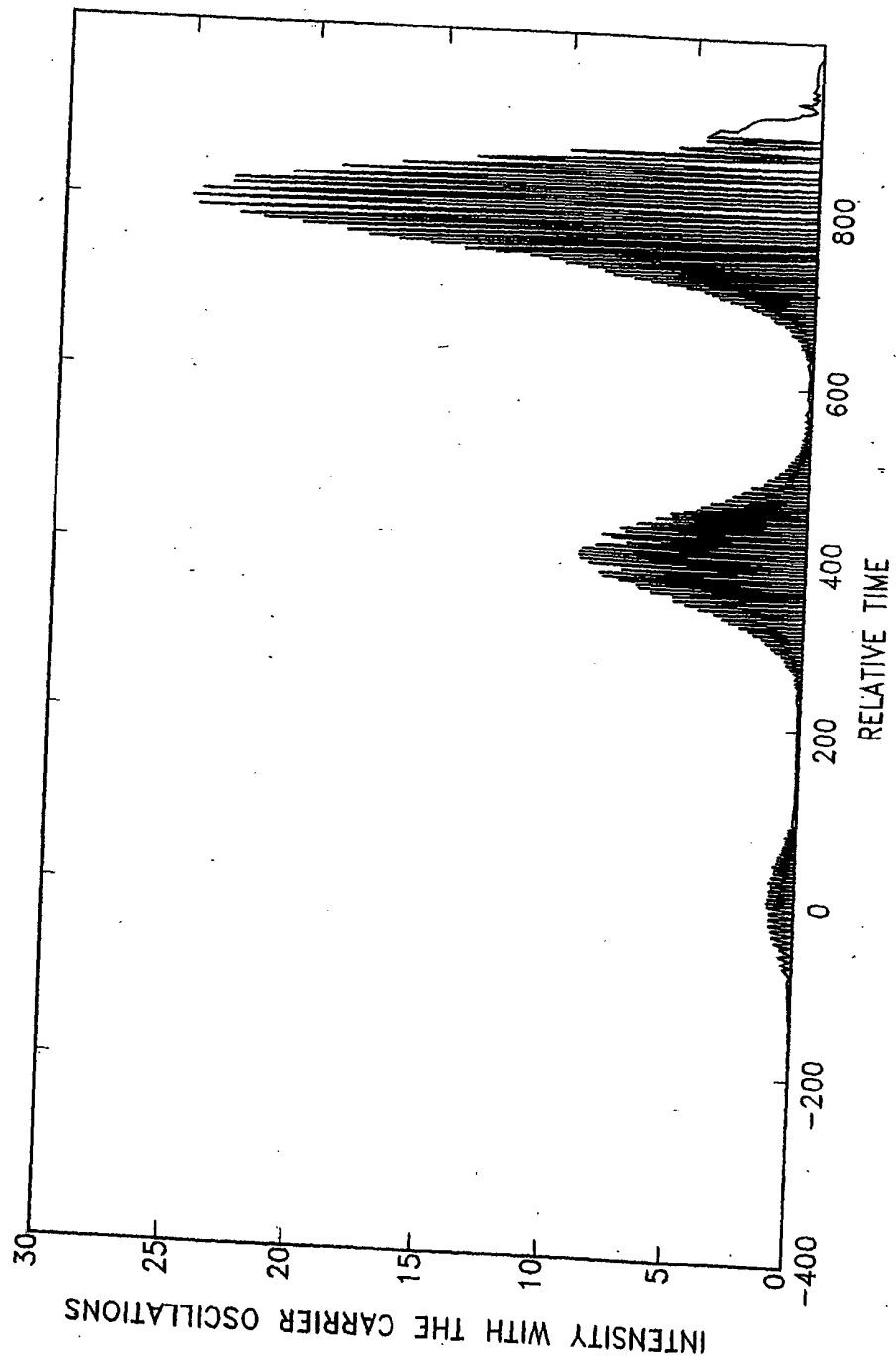


Figure 33

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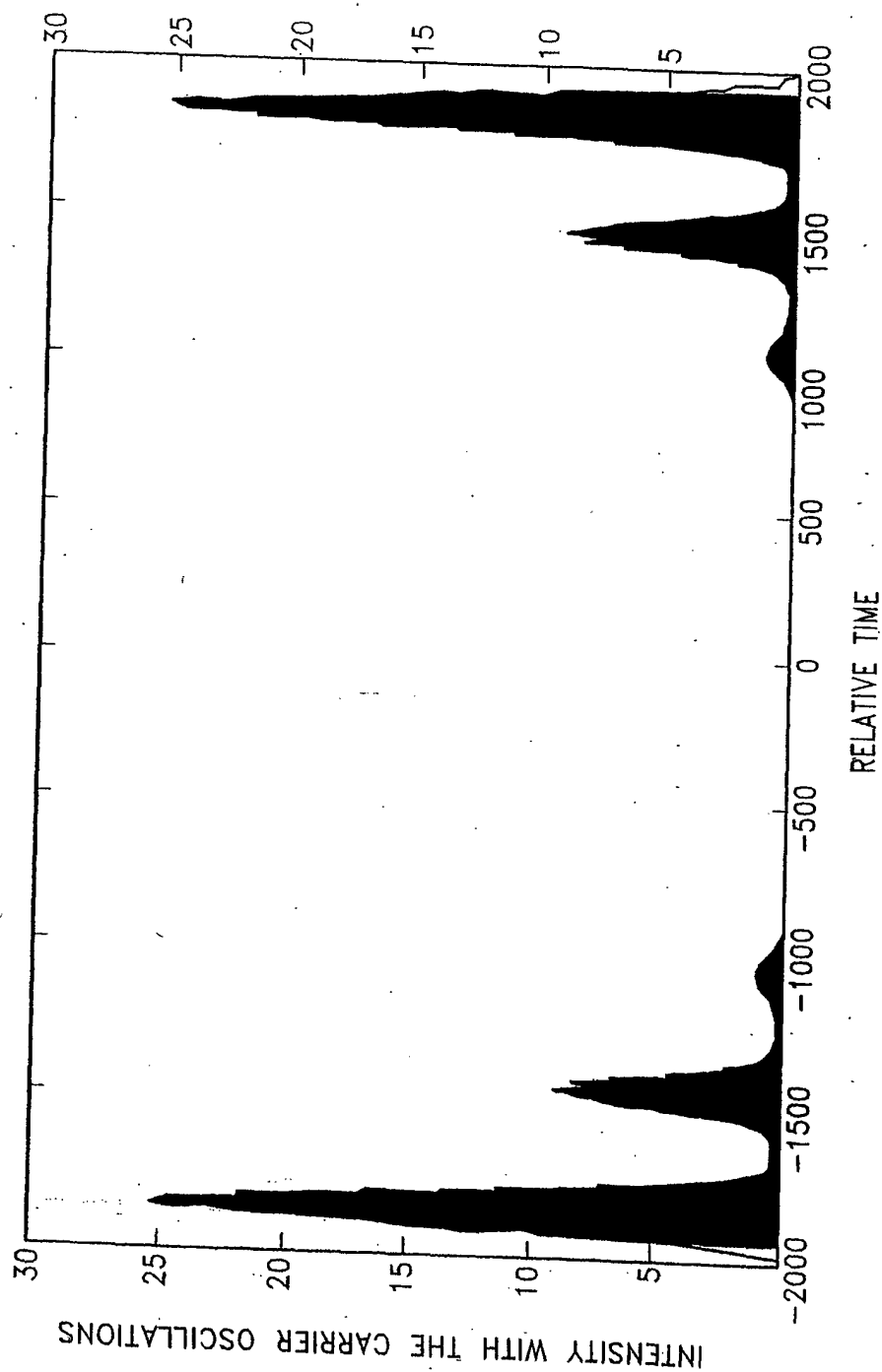


Figure 34

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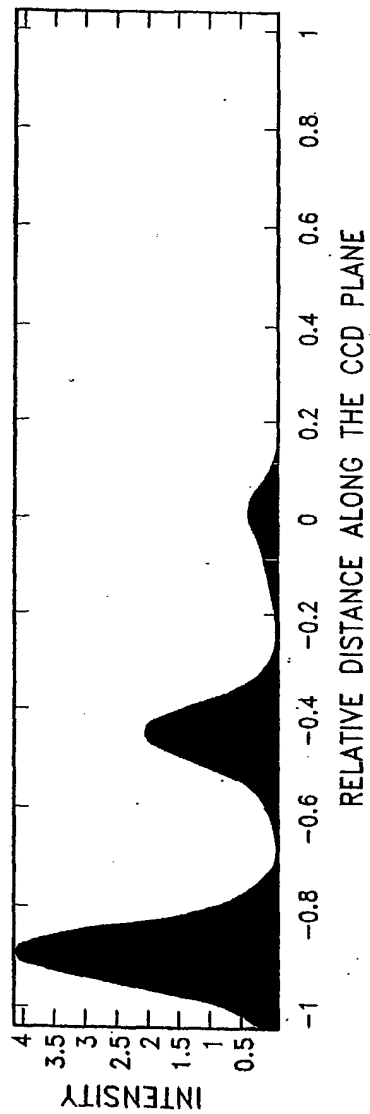


Figure 35A

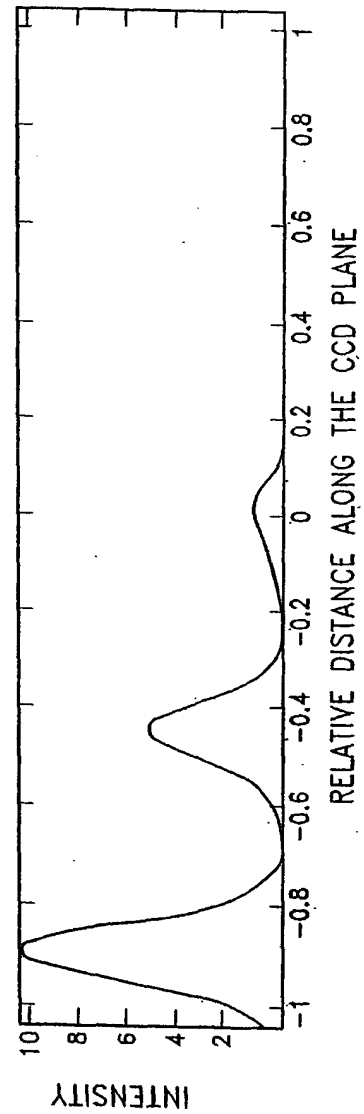


Figure 35B

METHOD OF MEASURING A PHYSICAL FUNCTION USING A
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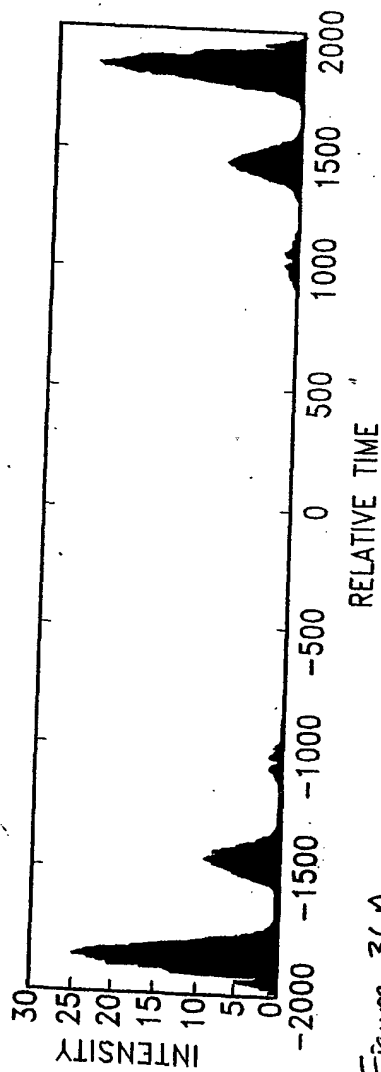


Figure 36A

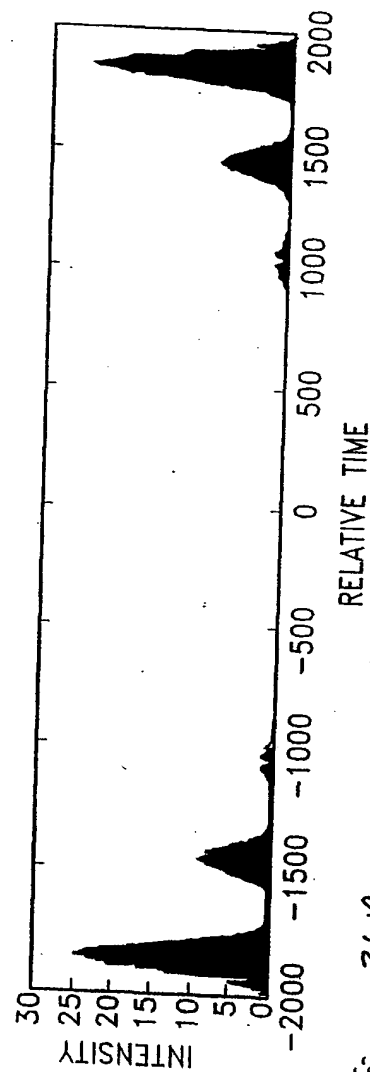


Figure 36B

METHOD OF MEASURING A PHYSICAL FUNCTION USING A
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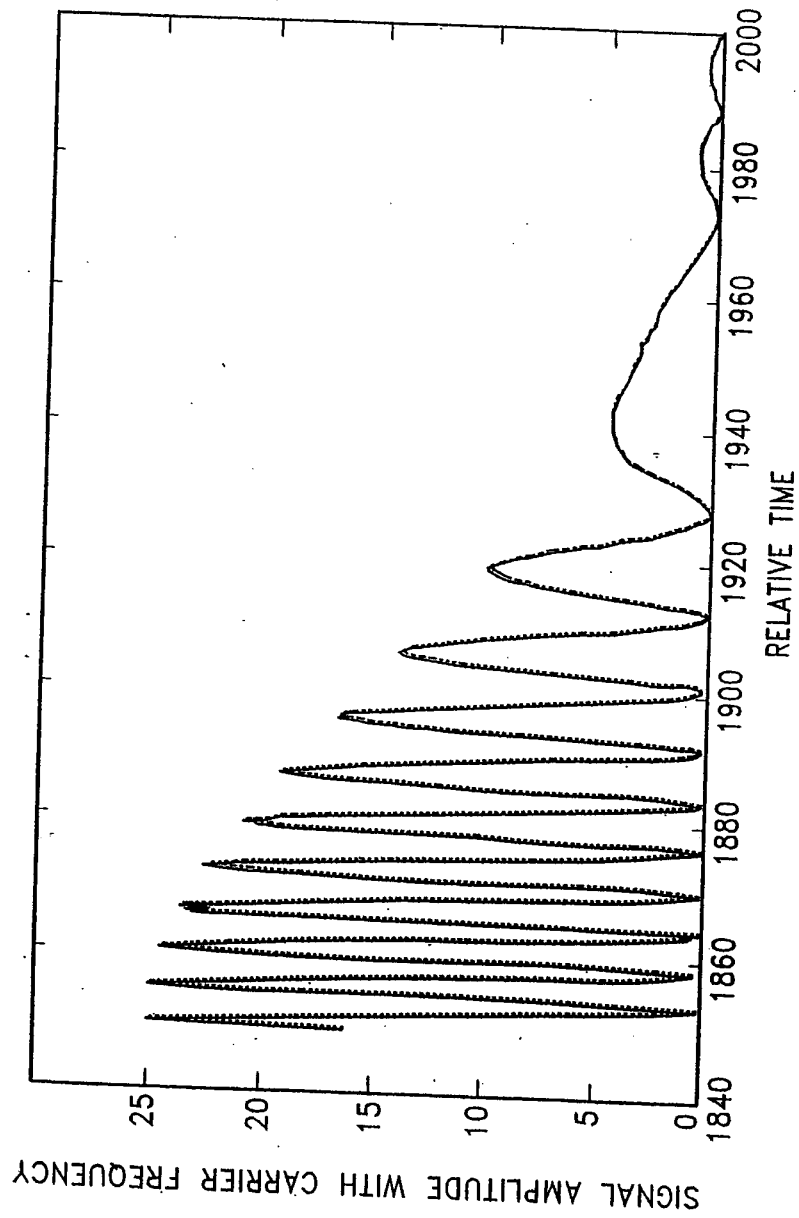


Figure 37

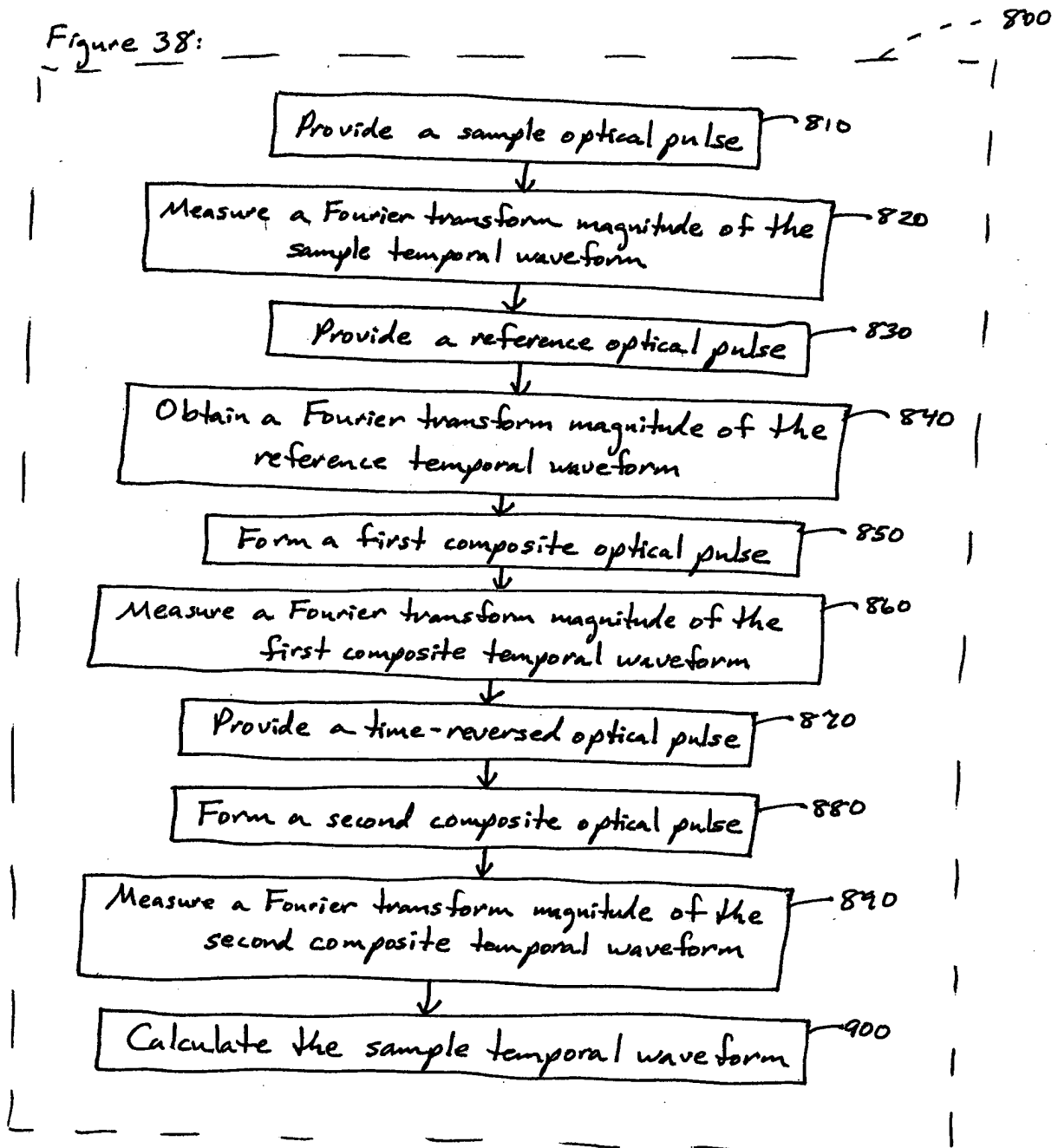
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COMPOSITE FUNCTION WHICH INCLUDES THE PHYSICAL
FUNCTION AND AN ARBITRARY REFERENCE FUNCTION

Aydogan Ozcan et al.

Appl. No.: Unknown

Atty Docket: STANF.131CP2

Figure 38:



METHOD OF MEASURING A PHYSICAL FUNCTION USING A
COMPOSITE FUNCTION WHICH INCLUDES THE PHYSICAL
FUNCTION AND AN ARBITRARY REFERENCE FUNCTION

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Appl. No.: Unknown Atty Docket: STANF.131CP2

Figure 39:

